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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-28724-1
Client Project/Site: Boeing of Portland 0025116.620.640

For:
Landau & Associates, Inc.
130 Second Ave South
Edmonds, Washington 98020

Attn: Evelyn Ives

Vanessa N. Badman

Authorized for release by:
2/17/2021 11:04:57 AM

Vanessa Badman, Project Manager
(717)556-9762
vanessa.badman@eurofinset.com

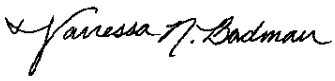
Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



Vanessa Badman
Project Manager
2/17/2021 11:04:57 AM

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Client: Landau & Associates, Inc.
Job ID: 410-28724-1
Project/Site: Boeing of Portland 0025116.620.640

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-28724-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-28724-1

Receipt
The samples were received on 2/6/2021 10:01 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

Receipt Exceptions
The container label for the following sample(s) did not match the information listed on the Chain-of-Custody (COC): 410-28724-5. The container labels list time of 11:58, while the COC lists time of 13:07. The client was contacted, and the lab was instructed to proceed with the analysis using the time listed on the bottles.

The container label for the following sample(s) did not match the information listed on the Chain-of-Custody (COC): 410-28724-7. The container labels list time of 11:00, while the COC lists time of 16:26. The client was contacted, and the lab was instructed to proceed with the analysis using the time listed on the chain of custody.

GC/MS VOA
Method 8260C_LL: The continuing calibration verification (CCV) associated with batch 410-93707 recovered above the upper control limit for 1,1,2,2-Tetrachloroethane. Non-detections of the affected analytes are reported. Any detections are considered estimated.

Method 8260C_LL: The continuing calibration verification (CCV) associated with batch 410-94538 recovered outside acceptance criteria, low biased, for 1,1-Dichloroethane, 1,1-Dichloroethene, Carbon disulfide, Methylene Chloride and trans-1,2-Dichloroethene. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Non-detections of the affected analytes are reported. Any detections are considered estimated.

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

Detection Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.620.640

Job ID: 410-28724-1

Client Sample ID: BOP-13ds-0221 — Lab Sample ID: 410-28724-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.308		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	2.03		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: BOP-13dg-0221 — Lab Sample ID: 410-28724-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	6.06		5.00		ug/L	1		8260C LL	Total/NA
Trichloroethene	0.457		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: BOP-31ds-0221 — Lab Sample ID: 410-28724-3

No Detections.

Client Sample ID: BOP-31dg-0221 — Lab Sample ID: 410-28724-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	5.77		5.00		ug/L	1		8260C LL	Total/NA
Chloroform	0.229		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	0.256		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	0.376		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	2.65		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: BOP-61ds-0221 — Lab Sample ID: 410-28724-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.355		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	3.53		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: BOP-61dg-0221 — Lab Sample ID: 410-28724-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	33.5		5.00		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	0.501		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	3.97		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: BOP-66ds-0221 — Lab Sample ID: 410-28724-7

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	1.68		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: BOP-Z-0221 — Lab Sample ID: 410-28724-8

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.326		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	2.14		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: Trip Blanks — Lab Sample ID: 410-28724-9

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client: Landau & Associates, Inc.
Job ID: 410-28724-1
Project/Site: Boeing of Portland 0025116.620.640

Client Sample ID: BOP-13ds-0221
Lab Sample ID: 410-28724-1
Date Collected: 02/03/21 17:30
Matrix: Water
Date Received: 02/06/21 10:01

Method: 8260C LL - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			02/12/21 18:33	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			02/12/21 18:33	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			02/12/21 18:33	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			02/12/21 18:33	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			02/12/21 18:33	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			02/12/21 18:33	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			02/12/21 18:33	1
2-Butanone	5.00	U	5.00		ug/L			02/12/21 18:33	1
2-Hexanone	5.00	U	5.00		ug/L			02/12/21 18:33	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			02/12/21 18:33	1
Acetone	5.00	U	5.00		ug/L			02/12/21 18:33	1
Benzene	0.200	U	0.200		ug/L			02/12/21 18:33	1
Bromodichloromethane	0.500	U	0.500		ug/L			02/12/21 18:33	1
Bromoform	1.00	U	1.00		ug/L			02/12/21 18:33	1
Bromomethane	0.500	U	0.500		ug/L			02/12/21 18:33	1
Carbon disulfide	0.500	U	0.500		ug/L			02/12/21 18:33	1
Carbon tetrachloride	0.200	U	0.200		ug/L			02/12/21 18:33	1
Chlorobenzene	0.500	U	0.500		ug/L			02/12/21 18:33	1
Chloroethane	0.500	U	0.500		ug/L			02/12/21 18:33	1
Chloroform	0.200	U	0.200		ug/L			02/12/21 18:33	1
Chloromethane	0.500	U	0.500		ug/L			02/12/21 18:33	1
cis-1,2-Dichloroethene	**0.308**		0.200		ug/L			02/12/21 18:33	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/12/21 18:33	1
Dibromochloromethane	0.500	U	0.500		ug/L			02/12/21 18:33	1
Ethylbenzene	0.500	U	0.500		ug/L			02/12/21 18:33	1
Freon 113	0.500	U	0.500		ug/L			02/12/21 18:33	1
m&p-Xylene	0.500	U	0.500		ug/L			02/12/21 18:33	1
Methylene Chloride	0.500	U	0.500		ug/L			02/12/21 18:33	1
o-Xylene	0.500	U	0.500		ug/L			02/12/21 18:33	1
Styrene	0.500	U	0.500		ug/L			02/12/21 18:33	1
Tetrachloroethene	0.200	U	0.200		ug/L			02/12/21 18:33	1
Toluene	0.200	U	0.200		ug/L			02/12/21 18:33	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/12/21 18:33	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/12/21 18:33	1
Trichloroethene	**2.03**		0.200		ug/L			02/12/21 18:33	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			02/12/21 18:33	1
Vinyl acetate	0.500	U	0.500		ug/L			02/12/21 18:33	1
Vinyl chloride	0.200	U	0.200		ug/L			02/12/21 18:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*02/12/21 18:33*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*02/12/21 18:33*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*02/12/21 18:33*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*02/12/21 18:33*	*1*

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.620.640

Job ID: 410-28724-1

Client Sample ID: BOP-13dg-0221
Date Collected: 02/03/21 17:45
Date Received: 02/06/21 10:01

Lab Sample ID: 410-28724-2
Matrix: Water

Method: 8260C LL - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			02/12/21 18:54	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			02/12/21 18:54	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			02/12/21 18:54	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			02/12/21 18:54	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			02/12/21 18:54	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			02/12/21 18:54	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			02/12/21 18:54	1
2-Butanone	5.00	U	5.00		ug/L			02/12/21 18:54	1
2-Hexanone	5.00	U	5.00		ug/L			02/12/21 18:54	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			02/12/21 18:54	1
Acetone	**6.06**		5.00		ug/L			02/12/21 18:54	1
Benzene	0.200	U	0.200		ug/L			02/12/21 18:54	1
Bromodichloromethane	0.500	U	0.500		ug/L			02/12/21 18:54	1
Bromoform	1.00	U	1.00		ug/L			02/12/21 18:54	1
Bromomethane	0.500	U	0.500		ug/L			02/12/21 18:54	1
Carbon disulfide	0.500	U	0.500		ug/L			02/12/21 18:54	1
Carbon tetrachloride	0.200	U	0.200		ug/L			02/12/21 18:54	1
Chlorobenzene	0.500	U	0.500		ug/L			02/12/21 18:54	1
Chloroethane	0.500	U	0.500		ug/L			02/12/21 18:54	1
Chloroform	0.200	U	0.200		ug/L			02/12/21 18:54	1
Chloromethane	0.500	U	0.500		ug/L			02/12/21 18:54	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/12/21 18:54	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/12/21 18:54	1
Dibromochloromethane	0.500	U	0.500		ug/L			02/12/21 18:54	1
Ethylbenzene	0.500	U	0.500		ug/L			02/12/21 18:54	1
Freon 113	0.500	U	0.500		ug/L			02/12/21 18:54	1
m&p-Xylene	0.500	U	0.500		ug/L			02/12/21 18:54	1
Methylene Chloride	0.500	U	0.500		ug/L			02/12/21 18:54	1
o-Xylene	0.500	U	0.500		ug/L			02/12/21 18:54	1
Styrene	0.500	U	0.500		ug/L			02/12/21 18:54	1
Tetrachloroethene	0.200	U	0.200		ug/L			02/12/21 18:54	1
Toluene	0.200	U	0.200		ug/L			02/12/21 18:54	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/12/21 18:54	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/12/21 18:54	1
Trichloroethene	**0.457**		0.200		ug/L			02/12/21 18:54	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			02/12/21 18:54	1
Vinyl acetate	0.500	U	0.500		ug/L			02/12/21 18:54	1
Vinyl chloride	0.200	U	0.200		ug/L			02/12/21 18:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*02/12/21 18:54*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*02/12/21 18:54*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*02/12/21 18:54*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*02/12/21 18:54*	*1*

Client: Landau & Associates, Inc.
Job ID: 410-28724-1
Project/Site: Boeing of Portland 0025116.620.640

Client Sample ID: BOP-31ds-0221
Lab Sample ID: 410-28724-3
Date Collected: 02/04/21 11:54
Matrix: Water
Date Received: 02/06/21 10:01

Method: 8260C LL - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			02/16/21 16:02	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			02/16/21 16:02	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			02/16/21 16:02	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			02/16/21 16:02	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			02/16/21 16:02	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			02/16/21 16:02	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			02/16/21 16:02	1
2-Butanone	5.00	U	5.00		ug/L			02/16/21 16:02	1
2-Hexanone	5.00	U	5.00		ug/L			02/16/21 16:02	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			02/16/21 16:02	1
Acetone	5.00	U	5.00		ug/L			02/16/21 16:02	1
Benzene	0.200	U	0.200		ug/L			02/16/21 16:02	1
Bromodichloromethane	0.500	U	0.500		ug/L			02/16/21 16:02	1
Bromoform	1.00	U	1.00		ug/L			02/16/21 16:02	1
Bromomethane	0.500	U	0.500		ug/L			02/16/21 16:02	1
Carbon disulfide	0.500	U	0.500		ug/L			02/16/21 16:02	1
Carbon tetrachloride	0.200	U	0.200		ug/L			02/16/21 16:02	1
Chlorobenzene	0.500	U	0.500		ug/L			02/16/21 16:02	1
Chloroethane	0.500	U	0.500		ug/L			02/16/21 16:02	1
Chloroform	0.200	U	0.200		ug/L			02/16/21 16:02	1
Chloromethane	0.500	U	0.500		ug/L			02/16/21 16:02	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/16/21 16:02	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/16/21 16:02	1
Dibromochloromethane	0.500	U	0.500		ug/L			02/16/21 16:02	1
Ethylbenzene	0.500	U	0.500		ug/L			02/16/21 16:02	1
Freon 113	0.500	U	0.500		ug/L			02/16/21 16:02	1
m&p-Xylene	0.500	U	0.500		ug/L			02/16/21 16:02	1
Methylene Chloride	0.500	U	0.500		ug/L			02/16/21 16:02	1
o-Xylene	0.500	U	0.500		ug/L			02/16/21 16:02	1
Styrene	0.500	U	0.500		ug/L			02/16/21 16:02	1
Tetrachloroethene	0.200	U	0.200		ug/L			02/16/21 16:02	1
Toluene	0.200	U	0.200		ug/L			02/16/21 16:02	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/16/21 16:02	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/16/21 16:02	1
Trichloroethene	0.200	U	0.200		ug/L			02/16/21 16:02	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			02/16/21 16:02	1
Vinyl acetate	0.500	U	0.500		ug/L			02/16/21 16:02	1
Vinyl chloride	0.200	U	0.200		ug/L			02/16/21 16:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*02/16/21 16:02*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*02/16/21 16:02*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*02/16/21 16:02*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*02/16/21 16:02*	*1*

Client: Landau & Associates, Inc.
Job ID: 410-28724-1
Project/Site: Boeing of Portland 0025116.620.640

Client Sample ID: BOP-31dg-0221
Lab Sample ID: 410-28724-4
Date Collected: 02/04/21 12:10
Matrix: Water
Date Received: 02/06/21 10:01

Method: 8260C LL - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			02/16/21 16:24	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			02/16/21 16:24	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			02/16/21 16:24	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			02/16/21 16:24	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			02/16/21 16:24	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			02/16/21 16:24	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			02/16/21 16:24	1
2-Butanone	5.00	U	5.00		ug/L			02/16/21 16:24	1
2-Hexanone	5.00	U	5.00		ug/L			02/16/21 16:24	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			02/16/21 16:24	1
Acetone	**5.77**		5.00		ug/L			02/16/21 16:24	1
Benzene	0.200	U	0.200		ug/L			02/16/21 16:24	1
Bromodichloromethane	0.500	U	0.500		ug/L			02/16/21 16:24	1
Bromoform	1.00	U	1.00		ug/L			02/16/21 16:24	1
Bromomethane	0.500	U	0.500		ug/L			02/16/21 16:24	1
Carbon disulfide	0.500	U	0.500		ug/L			02/16/21 16:24	1
Carbon tetrachloride	0.200	U	0.200		ug/L			02/16/21 16:24	1
Chlorobenzene	0.500	U	0.500		ug/L			02/16/21 16:24	1
Chloroethane	0.500	U	0.500		ug/L			02/16/21 16:24	1
Chloroform	**0.229**		0.200		ug/L			02/16/21 16:24	1
Chloromethane	0.500	U	0.500		ug/L			02/16/21 16:24	1
cis-1,2-Dichloroethene	**0.256**		0.200		ug/L			02/16/21 16:24	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/16/21 16:24	1
Dibromochloromethane	0.500	U	0.500		ug/L			02/16/21 16:24	1
Ethylbenzene	0.500	U	0.500		ug/L			02/16/21 16:24	1
Freon 113	0.500	U	0.500		ug/L			02/16/21 16:24	1
m&p-Xylene	0.500	U	0.500		ug/L			02/16/21 16:24	1
Methylene Chloride	0.500	U	0.500		ug/L			02/16/21 16:24	1
o-Xylene	0.500	U	0.500		ug/L			02/16/21 16:24	1
Styrene	0.500	U	0.500		ug/L			02/16/21 16:24	1
Tetrachloroethene	**0.376**		0.200		ug/L			02/16/21 16:24	1
Toluene	0.200	U	0.200		ug/L			02/16/21 16:24	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/16/21 16:24	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/16/21 16:24	1
Trichloroethene	**2.65**		0.200		ug/L			02/16/21 16:24	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			02/16/21 16:24	1
Vinyl acetate	0.500	U	0.500		ug/L			02/16/21 16:24	1
Vinyl chloride	0.200	U	0.200		ug/L			02/16/21 16:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*02/16/21 16:24*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*02/16/21 16:24*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*02/16/21 16:24*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*02/16/21 16:24*	*1*

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.620.640

Job ID: 410-28724-1

Client Sample ID: BOP-61ds-0221
Date Collected: 02/05/21 11:58
Date Received: 02/06/21 10:01

Lab Sample ID: 410-28724-5
Matrix: Water

Method: 8260C LL - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			02/16/21 16:45	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			02/16/21 16:45	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			02/16/21 16:45	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			02/16/21 16:45	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			02/16/21 16:45	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			02/16/21 16:45	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			02/16/21 16:45	1
2-Butanone	5.00	U	5.00		ug/L			02/16/21 16:45	1
2-Hexanone	5.00	U	5.00		ug/L			02/16/21 16:45	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			02/16/21 16:45	1
Acetone	5.00	U	5.00		ug/L			02/16/21 16:45	1
Benzene	0.200	U	0.200		ug/L			02/16/21 16:45	1
Bromodichloromethane	0.500	U	0.500		ug/L			02/16/21 16:45	1
Bromoform	1.00	U	1.00		ug/L			02/16/21 16:45	1
Bromomethane	0.500	U	0.500		ug/L			02/16/21 16:45	1
Carbon disulfide	0.500	U	0.500		ug/L			02/16/21 16:45	1
Carbon tetrachloride	0.200	U	0.200		ug/L			02/16/21 16:45	1
Chlorobenzene	0.500	U	0.500		ug/L			02/16/21 16:45	1
Chloroethane	0.500	U	0.500		ug/L			02/16/21 16:45	1
Chloroform	0.200	U	0.200		ug/L			02/16/21 16:45	1
Chloromethane	0.500	U	0.500		ug/L			02/16/21 16:45	1
cis-1,2-Dichloroethene	**0.355**		0.200		ug/L			02/16/21 16:45	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/16/21 16:45	1
Dibromochloromethane	0.500	U	0.500		ug/L			02/16/21 16:45	1
Ethylbenzene	0.500	U	0.500		ug/L			02/16/21 16:45	1
Freon 113	0.500	U	0.500		ug/L			02/16/21 16:45	1
m&p-Xylene	0.500	U	0.500		ug/L			02/16/21 16:45	1
Methylene Chloride	0.500	U	0.500		ug/L			02/16/21 16:45	1
o-Xylene	0.500	U	0.500		ug/L			02/16/21 16:45	1
Styrene	0.500	U	0.500		ug/L			02/16/21 16:45	1
Tetrachloroethene	0.200	U	0.200		ug/L			02/16/21 16:45	1
Toluene	0.200	U	0.200		ug/L			02/16/21 16:45	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/16/21 16:45	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/16/21 16:45	1
Trichloroethene	**3.53**		0.200		ug/L			02/16/21 16:45	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			02/16/21 16:45	1
Vinyl acetate	0.500	U	0.500		ug/L			02/16/21 16:45	1
Vinyl chloride	0.200	U	0.200		ug/L			02/16/21 16:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*02/16/21 16:45*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*02/16/21 16:45*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*02/16/21 16:45*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*02/16/21 16:45*	*1*

Client: Landau & Associates, Inc.
Job ID: 410-28724-1
Project/Site: Boeing of Portland 0025116.620.640

Client Sample ID: BOP-61dg-0221
Lab Sample ID: 410-28724-6

Date Collected: 02/05/21 12:20
Matrix: Water
Date Received: 02/06/21 10:01

Method: 8260C LL - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			02/16/21 17:06	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			02/16/21 17:06	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			02/16/21 17:06	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			02/16/21 17:06	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			02/16/21 17:06	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			02/16/21 17:06	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			02/16/21 17:06	1
2-Butanone	5.00	U	5.00		ug/L			02/16/21 17:06	1
2-Hexanone	5.00	U	5.00		ug/L			02/16/21 17:06	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			02/16/21 17:06	1
Acetone	**33.5**		5.00		ug/L			02/16/21 17:06	1
Benzene	0.200	U	0.200		ug/L			02/16/21 17:06	1
Bromodichloromethane	0.500	U	0.500		ug/L			02/16/21 17:06	1
Bromoform	1.00	U	1.00		ug/L			02/16/21 17:06	1
Bromomethane	0.500	U	0.500		ug/L			02/16/21 17:06	1
Carbon disulfide	0.500	U	0.500		ug/L			02/16/21 17:06	1
Carbon tetrachloride	0.200	U	0.200		ug/L			02/16/21 17:06	1
Chlorobenzene	0.500	U	0.500		ug/L			02/16/21 17:06	1
Chloroethane	0.500	U	0.500		ug/L			02/16/21 17:06	1
Chloroform	0.200	U	0.200		ug/L			02/16/21 17:06	1
Chloromethane	0.500	U	0.500		ug/L			02/16/21 17:06	1
cis-1,2-Dichloroethene	**0.501**		0.200		ug/L			02/16/21 17:06	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/16/21 17:06	1
Dibromochloromethane	0.500	U	0.500		ug/L			02/16/21 17:06	1
Ethylbenzene	0.500	U	0.500		ug/L			02/16/21 17:06	1
Freon 113	0.500	U	0.500		ug/L			02/16/21 17:06	1
m&p-Xylene	0.500	U	0.500		ug/L			02/16/21 17:06	1
Methylene Chloride	0.500	U	0.500		ug/L			02/16/21 17:06	1
o-Xylene	0.500	U	0.500		ug/L			02/16/21 17:06	1
Styrene	0.500	U	0.500		ug/L			02/16/21 17:06	1
Tetrachloroethene	0.200	U	0.200		ug/L			02/16/21 17:06	1
Toluene	0.200	U	0.200		ug/L			02/16/21 17:06	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/16/21 17:06	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/16/21 17:06	1
Trichloroethene	**3.97**		0.200		ug/L			02/16/21 17:06	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			02/16/21 17:06	1
Vinyl acetate	0.500	U	0.500		ug/L			02/16/21 17:06	1
Vinyl chloride	0.200	U	0.200		ug/L			02/16/21 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*02/16/21 17:06*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*02/16/21 17:06*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*02/16/21 17:06*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*02/16/21 17:06*	*1*

Client: Landau & Associates, Inc.
Job ID: 410-28724-1
Project/Site: Boeing of Portland 0025116.620.640

Client Sample ID: BOP-66ds-0221
Lab Sample ID: 410-28724-7
Date Collected: 02/05/21 16:26
Matrix: Water
Date Received: 02/06/21 10:01

Method: 8260C LL - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			02/16/21 17:27	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			02/16/21 17:27	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			02/16/21 17:27	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			02/16/21 17:27	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			02/16/21 17:27	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			02/16/21 17:27	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			02/16/21 17:27	1
2-Butanone	5.00	U	5.00		ug/L			02/16/21 17:27	1
2-Hexanone	5.00	U	5.00		ug/L			02/16/21 17:27	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			02/16/21 17:27	1
Acetone	5.00	U	5.00		ug/L			02/16/21 17:27	1
Benzene	0.200	U	0.200		ug/L			02/16/21 17:27	1
Bromodichloromethane	0.500	U	0.500		ug/L			02/16/21 17:27	1
Bromoform	1.00	U	1.00		ug/L			02/16/21 17:27	1
Bromomethane	0.500	U	0.500		ug/L			02/16/21 17:27	1
Carbon disulfide	0.500	U	0.500		ug/L			02/16/21 17:27	1
Carbon tetrachloride	0.200	U	0.200		ug/L			02/16/21 17:27	1
Chlorobenzene	0.500	U	0.500		ug/L			02/16/21 17:27	1
Chloroethane	0.500	U	0.500		ug/L			02/16/21 17:27	1
Chloroform	0.200	U	0.200		ug/L			02/16/21 17:27	1
Chloromethane	0.500	U	0.500		ug/L			02/16/21 17:27	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/16/21 17:27	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/16/21 17:27	1
Dibromochloromethane	0.500	U	0.500		ug/L			02/16/21 17:27	1
Ethylbenzene	0.500	U	0.500		ug/L			02/16/21 17:27	1
Freon 113	0.500	U	0.500		ug/L			02/16/21 17:27	1
m&p-Xylene	0.500	U	0.500		ug/L			02/16/21 17:27	1
Methylene Chloride	0.500	U	0.500		ug/L			02/16/21 17:27	1
o-Xylene	0.500	U	0.500		ug/L			02/16/21 17:27	1
Styrene	0.500	U	0.500		ug/L			02/16/21 17:27	1
Tetrachloroethene	0.200	U	0.200		ug/L			02/16/21 17:27	1
Toluene	0.200	U	0.200		ug/L			02/16/21 17:27	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/16/21 17:27	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/16/21 17:27	1
Trichloroethene	**1.68**		0.200		ug/L			02/16/21 17:27	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			02/16/21 17:27	1
Vinyl acetate	0.500	U	0.500		ug/L			02/16/21 17:27	1
Vinyl chloride	0.200	U	0.200		ug/L			02/16/21 17:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*02/16/21 17:27*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*02/16/21 17:27*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*02/16/21 17:27*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*02/16/21 17:27*	*1*

Client: Landau & Associates, Inc.
Job ID: 410-28724-1
Project/Site: Boeing of Portland 0025116.620.640

Client Sample ID: BOP-Z-0221
Lab Sample ID: 410-28724-8
Date Collected: 02/03/21 18:00
Matrix: Water
Date Received: 02/06/21 10:01

Method: 8260C LL - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			02/12/21 19:16	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			02/12/21 19:16	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			02/12/21 19:16	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			02/12/21 19:16	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			02/12/21 19:16	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			02/12/21 19:16	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			02/12/21 19:16	1
2-Butanone	5.00	U	5.00		ug/L			02/12/21 19:16	1
2-Hexanone	5.00	U	5.00		ug/L			02/12/21 19:16	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			02/12/21 19:16	1
Acetone	5.00	U	5.00		ug/L			02/12/21 19:16	1
Benzene	0.200	U	0.200		ug/L			02/12/21 19:16	1
Bromodichloromethane	0.500	U	0.500		ug/L			02/12/21 19:16	1
Bromoform	1.00	U	1.00		ug/L			02/12/21 19:16	1
Bromomethane	0.500	U	0.500		ug/L			02/12/21 19:16	1
Carbon disulfide	0.500	U	0.500		ug/L			02/12/21 19:16	1
Carbon tetrachloride	0.200	U	0.200		ug/L			02/12/21 19:16	1
Chlorobenzene	0.500	U	0.500		ug/L			02/12/21 19:16	1
Chloroethane	0.500	U	0.500		ug/L			02/12/21 19:16	1
Chloroform	0.200	U	0.200		ug/L			02/12/21 19:16	1
Chloromethane	0.500	U	0.500		ug/L			02/12/21 19:16	1
cis-1,2-Dichloroethene	**0.326**		0.200		ug/L			02/12/21 19:16	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/12/21 19:16	1
Dibromochloromethane	0.500	U	0.500		ug/L			02/12/21 19:16	1
Ethylbenzene	0.500	U	0.500		ug/L			02/12/21 19:16	1
Freon 113	0.500	U	0.500		ug/L			02/12/21 19:16	1
m&p-Xylene	0.500	U	0.500		ug/L			02/12/21 19:16	1
Methylene Chloride	0.500	U	0.500		ug/L			02/12/21 19:16	1
o-Xylene	0.500	U	0.500		ug/L			02/12/21 19:16	1
Styrene	0.500	U	0.500		ug/L			02/12/21 19:16	1
Tetrachloroethene	0.200	U	0.200		ug/L			02/12/21 19:16	1
Toluene	0.200	U	0.200		ug/L			02/12/21 19:16	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/12/21 19:16	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/12/21 19:16	1
Trichloroethene	**2.14**		0.200		ug/L			02/12/21 19:16	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			02/12/21 19:16	1
Vinyl acetate	0.500	U	0.500		ug/L			02/12/21 19:16	1
Vinyl chloride	0.200	U	0.200		ug/L			02/12/21 19:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*80 - 120*		*02/12/21 19:16*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*02/12/21 19:16*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*02/12/21 19:16*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*02/12/21 19:16*	*1*

Client: Landau & Associates, Inc.
Job ID: 410-28724-1
Project/Site: Boeing of Portland 0025116.620.640

Client Sample ID: Trip Blanks
Lab Sample ID: 410-28724-9

Date Collected: 02/03/21 00:00
Matrix: Water

Date Received: 02/06/21 10:01

Method: 8260C LL - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			02/12/21 14:39	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			02/12/21 14:39	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			02/12/21 14:39	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			02/12/21 14:39	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			02/12/21 14:39	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			02/12/21 14:39	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			02/12/21 14:39	1
2-Butanone	5.00	U	5.00		ug/L			02/12/21 14:39	1
2-Hexanone	5.00	U	5.00		ug/L			02/12/21 14:39	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			02/12/21 14:39	1
Acetone	5.00	U	5.00		ug/L			02/12/21 14:39	1
Benzene	0.200	U	0.200		ug/L			02/12/21 14:39	1
Bromodichloromethane	0.500	U	0.500		ug/L			02/12/21 14:39	1
Bromoform	1.00	U	1.00		ug/L			02/12/21 14:39	1
Bromomethane	0.500	U	0.500		ug/L			02/12/21 14:39	1
Carbon disulfide	0.500	U	0.500		ug/L			02/12/21 14:39	1
Carbon tetrachloride	0.200	U	0.200		ug/L			02/12/21 14:39	1
Chlorobenzene	0.500	U	0.500		ug/L			02/12/21 14:39	1
Chloroethane	0.500	U	0.500		ug/L			02/12/21 14:39	1
Chloroform	0.200	U	0.200		ug/L			02/12/21 14:39	1
Chloromethane	0.500	U	0.500		ug/L			02/12/21 14:39	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/12/21 14:39	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/12/21 14:39	1
Dibromochloromethane	0.500	U	0.500		ug/L			02/12/21 14:39	1
Ethylbenzene	0.500	U	0.500		ug/L			02/12/21 14:39	1
Freon 113	0.500	U	0.500		ug/L			02/12/21 14:39	1
m&p-Xylene	0.500	U	0.500		ug/L			02/12/21 14:39	1
Methylene Chloride	0.500	U	0.500		ug/L			02/12/21 14:39	1
o-Xylene	0.500	U	0.500		ug/L			02/12/21 14:39	1
Styrene	0.500	U	0.500		ug/L			02/12/21 14:39	1
Tetrachloroethene	0.200	U	0.200		ug/L			02/12/21 14:39	1
Toluene	0.200	U	0.200		ug/L			02/12/21 14:39	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/12/21 14:39	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/12/21 14:39	1
Trichloroethene	0.200	U	0.200		ug/L			02/12/21 14:39	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			02/12/21 14:39	1
Vinyl acetate	0.500	U	0.500		ug/L			02/12/21 14:39	1
Vinyl chloride	0.200	U	0.200		ug/L			02/12/21 14:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*02/12/21 14:39*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*02/12/21 14:39*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*02/12/21 14:39*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*02/12/21 14:39*	*1*

Surrogate Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.620.640

Job ID: 410-28724-1

Method: 8260C LL - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	DBFM	BFB	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-28724-1	BOP-13ds-0221	104	102	98	99
410-28724-2	BOP-13dg-0221	104	102	98	99
410-28724-3	BOP-31ds-0221	101	102	96	94
410-28724-4	BOP-31dg-0221	103	103	96	95
410-28724-5	BOP-61ds-0221	100	103	96	94
410-28724-6	BOP-61dg-0221	102	103	97	94
410-28724-7	BOP-66ds-0221	101	102	96	94
410-28724-8	BOP-Z-0221	110	104	98	98
410-28724-9	Trip Blanks	104	101	98	99
LCS 410-93707/5	Lab Control Sample	103	102	100	100
LCS 410-93707/7	Lab Control Sample	105	100	99	100
LCS 410-94538/5	Lab Control Sample	102	102	97	94
LCS 410-94538/7	Lab Control Sample	99	101	98	94
LCSD 410-93707/6	Lab Control Sample Dup	102	100	99	100
LCSD 410-93707/8	Lab Control Sample Dup	115	104	102	99
LCSD 410-94538/6	Lab Control Sample Dup	103	103	98	95
LCSD 410-94538/8	Lab Control Sample Dup	99	101	98	94
MB 410-93707/10	Method Blank	102	102	99	99
MB 410-94538/10	Method Blank	101	104	96	94

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C LL - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-93707/10
Matrix: Water
Analysis Batch: 93707

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			02/12/21 12:21	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			02/12/21 12:21	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			02/12/21 12:21	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			02/12/21 12:21	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			02/12/21 12:21	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			02/12/21 12:21	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			02/12/21 12:21	1
2-Butanone	5.00	U	5.00		ug/L			02/12/21 12:21	1
2-Hexanone	5.00	U	5.00		ug/L			02/12/21 12:21	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			02/12/21 12:21	1
Acetone	5.00	U	5.00		ug/L			02/12/21 12:21	1
Benzene	0.200	U	0.200		ug/L			02/12/21 12:21	1
Bromodichloromethane	0.500	U	0.500		ug/L			02/12/21 12:21	1
Bromoform	1.00	U	1.00		ug/L			02/12/21 12:21	1
Bromomethane	0.500	U	0.500		ug/L			02/12/21 12:21	1
Carbon disulfide	0.500	U	0.500		ug/L			02/12/21 12:21	1
Carbon tetrachloride	0.200	U	0.200		ug/L			02/12/21 12:21	1
Chlorobenzene	0.500	U	0.500		ug/L			02/12/21 12:21	1
Chloroethane	0.500	U	0.500		ug/L			02/12/21 12:21	1
Chloroform	0.200	U	0.200		ug/L			02/12/21 12:21	1
Chloromethane	0.500	U	0.500		ug/L			02/12/21 12:21	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/12/21 12:21	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/12/21 12:21	1
Dibromochloromethane	0.500	U	0.500		ug/L			02/12/21 12:21	1
Ethylbenzene	0.500	U	0.500		ug/L			02/12/21 12:21	1
Freon 113	0.500	U	0.500		ug/L			02/12/21 12:21	1
m&p-Xylene	0.500	U	0.500		ug/L			02/12/21 12:21	1
Methylene Chloride	0.500	U	0.500		ug/L			02/12/21 12:21	1
o-Xylene	0.500	U	0.500		ug/L			02/12/21 12:21	1
Styrene	0.500	U	0.500		ug/L			02/12/21 12:21	1
Tetrachloroethene	0.200	U	0.200		ug/L			02/12/21 12:21	1
Toluene	0.200	U	0.200		ug/L			02/12/21 12:21	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/12/21 12:21	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/12/21 12:21	1
Trichloroethene	0.200	U	0.200		ug/L			02/12/21 12:21	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			02/12/21 12:21	1
Vinyl acetate	0.500	U	0.500		ug/L			02/12/21 12:21	1
Vinyl chloride	0.200	U	0.200		ug/L			02/12/21 12:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*02/12/21 12:21*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*02/12/21 12:21*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*02/12/21 12:21*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*02/12/21 12:21*	*1*

Method: 8260C LL - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-93707/5
Matrix: Water
Analysis Batch: 93707

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	5.00	5.021		ug/L		100	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.974		ug/L		119	75 - 123
1,1,2-Trichloroethane	5.00	5.354		ug/L		107	80 - 120
1,1-Dichloroethane	5.00	5.029		ug/L		101	74 - 120
1,1-Dichloroethene	5.00	4.941		ug/L		99	80 - 131
1,2-Dichloroethane	5.00	4.865		ug/L		97	69 - 122
1,2-Dichloropropane	5.00	5.290		ug/L		106	80 - 120
2-Butanone	37.5	34.38		ug/L		92	59 - 141
2-Hexanone	25.0	24.44		ug/L		98	52 - 140
4-Methyl-2-pentanone	25.0	23.63		ug/L		95	55 - 140
Acetone	37.5	30.13		ug/L		80	60 - 146
Benzene	5.00	4.981		ug/L		100	80 - 120
Bromodichloromethane	5.00	5.202		ug/L		104	73 - 124
Bromoform	5.00	5.319		ug/L		106	49 - 144
Bromomethane	5.00	5.031		ug/L		101	60 - 136
Carbon disulfide	5.00	4.401		ug/L		88	67 - 130
Carbon tetrachloride	5.00	4.985		ug/L		100	64 - 141
Chlorobenzene	5.00	5.207		ug/L		104	80 - 120
Chloroethane	5.00	5.098		ug/L		102	63 - 120
Chloroform	5.00	5.059		ug/L		101	80 - 120
Chloromethane	5.00	4.813		ug/L		96	56 - 124
cis-1,2-Dichloroethene	5.00	4.931		ug/L		99	80 - 122
cis-1,3-Dichloropropene	5.00	5.114		ug/L		102	67 - 121
Dibromochloromethane	5.00	5.218		ug/L		104	64 - 138
Ethylbenzene	5.00	5.185		ug/L		104	80 - 120
Freon 113	5.00	4.670		ug/L		93	75 - 133
m&p-Xylene	10.0	10.36		ug/L		104	80 - 120
Methylene Chloride	5.00	5.022		ug/L		100	80 - 120
o-Xylene	5.00	5.176		ug/L		104	80 - 120
Styrene	5.00	5.276		ug/L		106	80 - 120
Tetrachloroethene	5.00	5.092		ug/L		102	80 - 120
Toluene	5.00	5.008		ug/L		100	80 - 120
trans-1,2-Dichloroethene	5.00	4.876		ug/L		98	80 - 122
trans-1,3-Dichloropropene	5.00	5.352		ug/L		107	61 - 129
Trichloroethene	5.00	5.003		ug/L		100	80 - 120
Trichlorofluoromethane	5.00	5.143		ug/L		103	62 - 136
Vinyl chloride	5.00	5.308		ug/L		106	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Method: 8260C LL - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-93707/7
Matrix: Water
Analysis Batch: 93707

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Vinyl acetate			12.5	13.90		ug/L		111	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-93707/6
Matrix: Water
Analysis Batch: 93707

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane			5.00	4.977		ug/L		100	78 - 126	1	30
1,1,2,2-Tetrachloroethane			5.00	5.862		ug/L		117	75 - 123	2	30
1,1,2-Trichloroethane			5.00	5.322		ug/L		106	80 - 120	1	30
1,1-Dichloroethane			5.00	5.018		ug/L		100	74 - 120	0	30
1,1-Dichloroethene			5.00	4.965		ug/L		99	80 - 131	0	30
1,2-Dichloroethane			5.00	4.905		ug/L		98	69 - 122	1	30
1,2-Dichloropropane			5.00	5.213		ug/L		104	80 - 120	1	30
2-Butanone			37.5	31.81		ug/L		85	59 - 141	8	30
2-Hexanone			25.0	23.30		ug/L		93	52 - 140	5	30
4-Methyl-2-pentanone			25.0	21.86		ug/L		87	55 - 140	8	30
Acetone			37.5	27.84		ug/L		74	60 - 146	8	30
Benzene			5.00	4.925		ug/L		99	80 - 120	1	30
Bromodichloromethane			5.00	5.076		ug/L		102	73 - 124	2	30
Bromoform			5.00	5.259		ug/L		105	49 - 144	1	30
Bromomethane			5.00	4.999		ug/L		100	60 - 136	1	30
Carbon disulfide			5.00	4.392		ug/L		88	67 - 130	0	30
Carbon tetrachloride			5.00	4.904		ug/L		98	64 - 141	2	30
Chlorobenzene			5.00	5.099		ug/L		102	80 - 120	2	30
Chloroethane			5.00	5.152		ug/L		103	63 - 120	1	30
Chloroform			5.00	5.045		ug/L		101	80 - 120	0	30
Chloromethane			5.00	4.844		ug/L		97	56 - 124	1	30
cis-1,2-Dichloroethene			5.00	4.915		ug/L		98	80 - 122	0	30
cis-1,3-Dichloropropene			5.00	5.032		ug/L		101	67 - 121	2	30
Dibromochloromethane			5.00	5.136		ug/L		103	64 - 138	2	30
Ethylbenzene			5.00	5.141		ug/L		103	80 - 120	1	30
Freon 113			5.00	4.620		ug/L		92	75 - 133	1	30
m&p-Xylene			10.0	10.21		ug/L		102	80 - 120	1	30
Methylene Chloride			5.00	4.999		ug/L		100	80 - 120	0	30
o-Xylene			5.00	5.120		ug/L		102	80 - 120	1	30
Styrene			5.00	5.216		ug/L		104	80 - 120	1	30
Tetrachloroethene			5.00	5.035		ug/L		101	80 - 120	1	30
Toluene			5.00	4.916		ug/L		98	80 - 120	2	30
trans-1,2-Dichloroethene			5.00	4.833		ug/L		97	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	5.320		ug/L		106	61 - 129	1	30
Trichloroethene			5.00	4.961		ug/L		99	80 - 120	1	30

Method: 8260C LL - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-93707/6
Matrix: Water
Analysis Batch: 93707

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Trichlorofluoromethane			5.00	5.104		ug/L		102	62 - 136	1	30
Vinyl chloride			5.00	5.164		ug/L		103	60 - 125	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-93707/8
Matrix: Water
Analysis Batch: 93707

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Vinyl acetate			12.5	16.95		ug/L		136	38 - 145	20	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*115*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: MB 410-94538/10
Matrix: Water
Analysis Batch: 94538

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			02/16/21 12:50	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			02/16/21 12:50	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			02/16/21 12:50	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			02/16/21 12:50	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			02/16/21 12:50	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			02/16/21 12:50	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			02/16/21 12:50	1
2-Butanone	5.00	U	5.00		ug/L			02/16/21 12:50	1
2-Hexanone	5.00	U	5.00		ug/L			02/16/21 12:50	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			02/16/21 12:50	1
Acetone	5.00	U	5.00		ug/L			02/16/21 12:50	1
Benzene	0.200	U	0.200		ug/L			02/16/21 12:50	1
Bromodichloromethane	0.500	U	0.500		ug/L			02/16/21 12:50	1
Bromoform	1.00	U	1.00		ug/L			02/16/21 12:50	1
Bromomethane	0.500	U	0.500		ug/L			02/16/21 12:50	1
Carbon disulfide	0.500	U	0.500		ug/L			02/16/21 12:50	1
Carbon tetrachloride	0.200	U	0.200		ug/L			02/16/21 12:50	1
Chlorobenzene	0.500	U	0.500		ug/L			02/16/21 12:50	1
Chloroethane	0.500	U	0.500		ug/L			02/16/21 12:50	1
Chloroform	0.200	U	0.200		ug/L			02/16/21 12:50	1
Chloromethane	0.500	U	0.500		ug/L			02/16/21 12:50	1

Method: 8260C LL - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-94538/10
Matrix: Water
Analysis Batch: 94538

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/16/21 12:50	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/16/21 12:50	1
Dibromochloromethane	0.500	U	0.500		ug/L			02/16/21 12:50	1
Ethylbenzene	0.500	U	0.500		ug/L			02/16/21 12:50	1
Freon 113	0.500	U	0.500		ug/L			02/16/21 12:50	1
m&p-Xylene	0.500	U	0.500		ug/L			02/16/21 12:50	1
Methylene Chloride	0.500	U	0.500		ug/L			02/16/21 12:50	1
o-Xylene	0.500	U	0.500		ug/L			02/16/21 12:50	1
Styrene	0.500	U	0.500		ug/L			02/16/21 12:50	1
Tetrachloroethene	0.200	U	0.200		ug/L			02/16/21 12:50	1
Toluene	0.200	U	0.200		ug/L			02/16/21 12:50	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			02/16/21 12:50	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			02/16/21 12:50	1
Trichloroethene	0.200	U	0.200		ug/L			02/16/21 12:50	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			02/16/21 12:50	1
Vinyl acetate	0.500	U	0.500		ug/L			02/16/21 12:50	1
Vinyl chloride	0.200	U	0.200		ug/L			02/16/21 12:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*02/16/21 12:50*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*02/16/21 12:50*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*02/16/21 12:50*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*02/16/21 12:50*	*1*

Lab Sample ID: LCS 410-94538/5
Matrix: Water
Analysis Batch: 94538

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,1,1-Trichloroethane			5.00	5.258		ug/L		105	78 - 126		
1,1,2,2-Tetrachloroethane			5.00	4.601		ug/L		92	75 - 123		
1,1,2-Trichloroethane			5.00	4.831		ug/L		97	80 - 120		
1,1-Dichloroethane			5.00	5.003		ug/L		100	74 - 120		
1,1-Dichloroethene			5.00	5.569		ug/L		111	80 - 131		
1,2-Dichloroethane			5.00	4.896		ug/L		98	69 - 122		
1,2-Dichloropropane			5.00	5.048		ug/L		101	80 - 120		
2-Butanone			37.5	33.17		ug/L		88	59 - 141		
2-Hexanone			25.0	23.07		ug/L		92	52 - 140		
4-Methyl-2-pentanone			25.0	22.04		ug/L		88	55 - 140		
Acetone			37.5	29.46		ug/L		79	60 - 146		
Benzene			5.00	5.056		ug/L		101	80 - 120		
Bromodichloromethane			5.00	5.125		ug/L		102	73 - 124		
Bromoform			5.00	5.072		ug/L		101	49 - 144		
Bromomethane			5.00	4.704		ug/L		94	60 - 136		
Carbon disulfide			5.00	5.121		ug/L		102	67 - 130		
Carbon tetrachloride			5.00	5.313		ug/L		106	64 - 141		
Chlorobenzene			5.00	4.814		ug/L		96	80 - 120		
Chloroethane			5.00	4.483		ug/L		90	63 - 120		

Method: 8260C LL - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-94538/5
Matrix: Water
Analysis Batch: 94538

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroform	5.00	5.132		ug/L		103	80 - 120
Chloromethane	5.00	4.255		ug/L		85	56 - 124
cis-1,2-Dichloroethene	5.00	5.207		ug/L		104	80 - 122
cis-1,3-Dichloropropene	5.00	5.149		ug/L		103	67 - 121
Dibromochloromethane	5.00	4.801		ug/L		96	64 - 138
Ethylbenzene	5.00	4.728		ug/L		95	80 - 120
Freon 113	5.00	5.312		ug/L		106	75 - 133
m&p-Xylene	10.0	9.541		ug/L		95	80 - 120
Methylene Chloride	5.00	5.135		ug/L		103	80 - 120
o-Xylene	5.00	4.793		ug/L		96	80 - 120
Styrene	5.00	4.903		ug/L		98	80 - 120
Tetrachloroethene	5.00	5.029		ug/L		101	80 - 120
Toluene	5.00	4.658		ug/L		93	80 - 120
trans-1,2-Dichloroethene	5.00	5.269		ug/L		105	80 - 122
trans-1,3-Dichloropropene	5.00	4.960		ug/L		99	61 - 129
Trichloroethene	5.00	5.131		ug/L		103	80 - 120
Trichlorofluoromethane	5.00	4.985		ug/L		100	62 - 136
Vinyl chloride	5.00	4.591		ug/L		92	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*94*		*80 - 120*

Lab Sample ID: LCS 410-94538/7
Matrix: Water
Analysis Batch: 94538

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl acetate	12.5	12.28		ug/L		98	38 - 145

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*94*		*80 - 120*

Lab Sample ID: LCSD 410-94538/6
Matrix: Water
Analysis Batch: 94538

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	5.00	5.192		ug/L		104	78 - 126	1	30
1,1,2,2-Tetrachloroethane	5.00	4.573		ug/L		91	75 - 123	1	30
1,1,2-Trichloroethane	5.00	4.720		ug/L		94	80 - 120	2	30
1,1-Dichloroethane	5.00	4.928		ug/L		99	74 - 120	2	30
1,1-Dichloroethene	5.00	5.443		ug/L		109	80 - 131	2	30

Method: 8260C LL - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-94538/6
Matrix: Water
Analysis Batch: 94538

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloroethane			5.00	4.912		ug/L		98	69 - 122	0	30
1,2-Dichloropropane			5.00	5.043		ug/L		101	80 - 120	0	30
2-Butanone			37.5	31.91		ug/L		85	59 - 141	4	30
2-Hexanone			25.0	22.35		ug/L		89	52 - 140	3	30
4-Methyl-2-pentanone			25.0	21.26		ug/L		85	55 - 140	4	30
Acetone			37.5	28.34		ug/L		76	60 - 146	4	30
Benzene			5.00	5.013		ug/L		100	80 - 120	1	30
Bromodichloromethane			5.00	5.034		ug/L		101	73 - 124	2	30
Bromoform			5.00	4.884		ug/L		98	49 - 144	4	30
Bromomethane			5.00	4.708		ug/L		94	60 - 136	0	30
Carbon disulfide			5.00	5.050		ug/L		101	67 - 130	1	30
Carbon tetrachloride			5.00	5.341		ug/L		107	64 - 141	1	30
Chlorobenzene			5.00	4.801		ug/L		96	80 - 120	0	30
Chloroethane			5.00	4.454		ug/L		89	63 - 120	1	30
Chloroform			5.00	5.058		ug/L		101	80 - 120	1	30
Chloromethane			5.00	4.147		ug/L		83	56 - 124	3	30
cis-1,2-Dichloroethene			5.00	5.093		ug/L		102	80 - 122	2	30
cis-1,3-Dichloropropene			5.00	5.096		ug/L		102	67 - 121	1	30
Dibromochloromethane			5.00	4.835		ug/L		97	64 - 138	1	30
Ethylbenzene			5.00	4.725		ug/L		95	80 - 120	0	30
Freon 113			5.00	5.258		ug/L		105	75 - 133	1	30
m&p-Xylene			10.0	9.504		ug/L		95	80 - 120	0	30
Methylene Chloride			5.00	5.076		ug/L		102	80 - 120	1	30
o-Xylene			5.00	4.780		ug/L		96	80 - 120	0	30
Styrene			5.00	4.904		ug/L		98	80 - 120	0	30
Tetrachloroethene			5.00	4.945		ug/L		99	80 - 120	2	30
Toluene			5.00	4.679		ug/L		94	80 - 120	0	30
trans-1,2-Dichloroethene			5.00	5.151		ug/L		103	80 - 122	2	30
trans-1,3-Dichloropropene			5.00	4.937		ug/L		99	61 - 129	0	30
Trichloroethene			5.00	5.070		ug/L		101	80 - 120	1	30
Trichlorofluoromethane			5.00	4.983		ug/L		100	62 - 136	0	30
Vinyl chloride			5.00	4.596		ug/L		92	60 - 125	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*95*		*80 - 120*

Lab Sample ID: LCSD 410-94538/8
Matrix: Water
Analysis Batch: 94538

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Vinyl acetate			12.5	11.16		ug/L		89	38 - 145	10	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*

Method: 8260C LL - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-94538/8
Matrix: Water
Analysis Batch: 94538

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

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Dibromofluoromethane (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	98		80 - 120
Toluene-d8 (Surr)	94		80 - 120

QC Association Summary

Client: Landau & Associates, Inc.
Job ID: 410-28724-1
Project/Site: Boeing of Portland 0025116.620.640

GC/MS VOA

Analysis Batch: 93707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28724-1	BOP-13ds-0221	Total/NA	Water	8260C LL	
410-28724-2	BOP-13dg-0221	Total/NA	Water	8260C LL	
410-28724-8	BOP-Z-0221	Total/NA	Water	8260C LL	
410-28724-9	Trip Blanks	Total/NA	Water	8260C LL	
MB 410-93707/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-93707/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-93707/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-93707/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-93707/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Analysis Batch: 94538

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28724-3	BOP-31ds-0221	Total/NA	Water	8260C LL	
410-28724-4	BOP-31dg-0221	Total/NA	Water	8260C LL	
410-28724-5	BOP-61ds-0221	Total/NA	Water	8260C LL	
410-28724-6	BOP-61dg-0221	Total/NA	Water	8260C LL	
410-28724-7	BOP-66ds-0221	Total/NA	Water	8260C LL	
MB 410-94538/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-94538/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-94538/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-94538/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-94538/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Lab Chronicle

Client: Landau & Associates, Inc.
Job ID: 410-28724-1
Project/Site: Boeing of Portland 0025116.620.640

Client Sample ID: BOP-13ds-0221
Lab Sample ID: 410-28724-1
Date Collected: 02/03/21 17:30
Matrix: Water
Date Received: 02/06/21 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	93707	02/12/21 18:33	LCW8	ELLE

Client Sample ID: BOP-13dg-0221
Lab Sample ID: 410-28724-2
Date Collected: 02/03/21 17:45
Matrix: Water
Date Received: 02/06/21 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	93707	02/12/21 18:54	LCW8	ELLE

Client Sample ID: BOP-31ds-0221
Lab Sample ID: 410-28724-3
Date Collected: 02/04/21 11:54
Matrix: Water
Date Received: 02/06/21 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	94538	02/16/21 16:02	K4WN	ELLE

Client Sample ID: BOP-31dg-0221
Lab Sample ID: 410-28724-4
Date Collected: 02/04/21 12:10
Matrix: Water
Date Received: 02/06/21 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	94538	02/16/21 16:24	K4WN	ELLE

Client Sample ID: BOP-61ds-0221
Lab Sample ID: 410-28724-5
Date Collected: 02/05/21 11:58
Matrix: Water
Date Received: 02/06/21 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	94538	02/16/21 16:45	K4WN	ELLE

Client Sample ID: BOP-61dg-0221
Lab Sample ID: 410-28724-6
Date Collected: 02/05/21 12:20
Matrix: Water
Date Received: 02/06/21 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	94538	02/16/21 17:06	K4WN	ELLE

Client Sample ID: BOP-66ds-0221
Lab Sample ID: 410-28724-7
Date Collected: 02/05/21 16:26
Matrix: Water
Date Received: 02/06/21 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	94538	02/16/21 17:27	K4WN	ELLE

Lab Chronicle

Client: Landau & Associates, Inc.
Job ID: 410-28724-1
Project/Site: Boeing of Portland 0025116.620.640

Client Sample ID: BOP-Z-0221
Lab Sample ID: 410-28724-8
Date Collected: 02/03/21 18:00
Matrix: Water
Date Received: 02/06/21 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	93707	02/12/21 19:16	LCW8	ELLE

Client Sample ID: Trip Blanks
Lab Sample ID: 410-28724-9
Date Collected: 02/03/21 00:00
Matrix: Water
Date Received: 02/06/21 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	93707	02/12/21 14:39	LCW8	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Landau & Associates, Inc.
Job ID: 410-28724-1
Project/Site: Boeing of Portland 0025116.620.640

Laboratory: Eurofins Lancaster Laboratories Env, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	PA200001-018	09-12-21

Method Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.620.640

Job ID: 410-28724-1

Method	Method Description	Protocol	Laboratory
8260C LL	Volatile Organic Compounds by GC/MS	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Landau & Associates, Inc.
Job ID: 410-28724-1
Project/Site: Boeing of Portland 0025116.620.640

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-28724-1	BOP-13ds-0221	Water	02/03/21 17:30	02/06/21 10:01	
410-28724-2	BOP-13dg-0221	Water	02/03/21 17:45	02/06/21 10:01	
410-28724-3	BOP-31ds-0221	Water	02/04/21 11:54	02/06/21 10:01	
410-28724-4	BOP-31dg-0221	Water	02/04/21 12:10	02/06/21 10:01	
410-28724-5	BOP-61ds-0221	Water	02/05/21 11:58	02/06/21 10:01	
410-28724-6	BOP-61dg-0221	Water	02/05/21 12:20	02/06/21 10:01	
410-28724-7	BOP-66ds-0221	Water	02/05/21 16:26	02/06/21 10:01	
410-28724-8	BOP-Z-0221	Water	02/03/21 18:00	02/06/21 10:01	
410-28724-9	Trip Blanks	Water	02/03/21 00:00	02/06/21 10:01	

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____ 410-28724 Chain of Custody

onmental use only

orrespond.

1 Client Information

Site Location: Gresham Oregon
Site Project: Boeing of Portland
Site Program/#: 002S116.620.640
Boeing PM: Debbie Taege
Consultant Contact: Evelyn Ives
Report To: Alive
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: Wolfgang Lopez # of Coolers: 1

4 Analyses Requested

5 Remarks/Comments

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	VOC (38 list)											
BOP-13ds-0221	2/3/21	17:30	H2O	3	X											
BOP-13dg-0221	2/3/21	17:45			X											
BOP-31ds-0221	2/4/21	11:54			X											
BOP-31dg-0221	2/4/21	12:10			X											
BOP-61ds-0221	2/5/21	13:07			X											
BOP-61dg-0221	2/5/21	12:20			X											
BOP-66ds-0221	2/5/21	1626			X											
BOP-2-0221	2/3/21	18:00			X											
Trip blanks	—	—	H2O	2	X											

6 Turnaround Time Requested (please circle)

Standard | 5 day | 4 day
72 hour | 48 hour | 24 hour

Date needed: _____

Relinquished by:	Date/Time	Received by:	Date/Time
W. Lopez	2/5/21 16:45		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
			2/6/21 1001

Relinquished by commercial carrier (circle): UPS FedEx Other: _____

Temperature upon Receipt: 1.5 °C

Custody Seals Intact?: Yes No

7

Eurofins Lancaster Laboratories Environmental, LLC, 2425 New Holland Pike, Lancaster, PA 17601 717-656-2300

7063 0913

The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be given to the SeaTac Courier. The pink copy should be retained by the client.

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 410-28724-1

Login Number: 28724

List Source: Eurofins Lancaster Laboratories Env

List Number: 1

Creator: Colon Martinez, Jessenia C

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