APPENDIX A

2020 Data Validation Memoranda and Laboratory Results

First Quarter 2020

Technical Memorandum

TO: Evelyn Ives, Project Manager

FROM: Kristi Schultz and Danielle Jorgensen

DATE: March 31, 2020

RE: **Boeing Portland Troutdale Gravel Aquifer (TGA)**
First Quarter 2020 Groundwater Quality Sampling
Laboratory Data Quality Evaluation

This technical memorandum provides the results of a focused data validation associated with 39 groundwater samples, 4 field duplicates, and 9 trip blanks collected during the first quarter 2020 TGA sampling event at Boeing Portland. Samples were analyzed by Eurofins Lancaster Laboratories Environmental (ELLE), located in Lancaster, Pennsylvania. This data quality evaluation covers ELLE data packages 2086723, 2086955, 2086956, 2087203, 2087205, 2087461, 2087761, 2088235, and 2089909. Samples submitted to ELLE were analyzed for volatile organic compounds ([VOCs], US Environmental Protection Agency [EPA] Method SW8260C); conventional inorganic parameters including N-Nitrate, N-Nitrite, and sulfate (EPA Method 300.0); sulfide (EPA Method 376.1); total and dissolved iron (EPA Method 6010C); N-Ammonia (Method SM 4500 NH3D-2011); total organic carbon (Method SM 5310 C-2011); oil and grease (EPA Method 1664A); diesel- and motor oil-range petroleum hydrocarbons (Oregon Department of Environmental Quality [ODEQ]-approved Method NWTPH-Dx); and methane, ethane, ethane, and acetylene (MEEA; Modified RSK 175).

The verification and validation check was conducted with guidance from applicable portions of EPA's *National Functional Guidelines for Organic Data Review* (EPA 2016b) and the *National Functional Guidelines for Inorganic Data Review* (EPA 2016a). Landau Associates, Inc. (LAI) performed an EPA-equivalent Level IIA verification and validation check on each laboratory data package, which included the following:

- Verification that the laboratory data package contained all necessary documentation (including chain-of-custody record (COCs); identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at the laboratory; date and time of sample analysis; explanation of any significant corrective actions taken by the laboratory during the analytical process; and, if applicable, date of extraction, definition of laboratory data qualifiers, all sample-related quality control data, and quality control acceptance criteria).
- Verification that all requested analyses, special cleanups, and special handling methods were performed.
- Evaluation of sample holding times.
- Evaluation of quality control data compared to acceptance criteria, including method blanks, surrogate recoveries, matrix spike results, laboratory duplicate and/or replicate results, and laboratory control sample results.
- Evaluation of overall data quality and completeness of analytical data.

Data validation qualifiers are added to the sample results, as appropriate, based on the verification and validation check. The absence of a data qualifier indicates that the reported result is acceptable

without qualification. The data quality evaluation is summarized below. Data qualifiers are summarized in Table 1.

Chain-of-Custody Records

A signed COC record was attached to the data packages. The laboratory received all samples in good condition, with the following exceptions:

- The laboratory noted in the associated case narratives that an anti-foaming agent was applied to samples BOP-85i-0220, BOP-86i-0220, BOP-87i-0220, E-7-0220, and E-11-0220 when foaming was observed during sample purging. No qualification of the data was necessary.
- The laboratory noted in the case narrative for data package 2087203 that the sample vials used for the trial 3 and trial 4 VOC reanalyses of sample E-7-0220 contained headspace. All associated reported sample results were qualified as estimated (J, UJ), as indicated in Table 1.
- The laboratory noted in the case narrative for data package 2087203 that the sample vial used for the trial 2 VOC analysis of sample BOP-x-0220 contained headspace. All associated reported sample results were qualified as estimated (J, UJ), as indicated in Table 1.
- The laboratory noted in the case narrative for data package 2087203 that the sample container for sample E-7-0220 was not within specification for the total organic carbon analysis; the sample preservation was updated accordingly by the laboratory to meet required specifications. No qualification of the data was determined necessary.
- The laboratory noted in the case narrative for data package 2087461 that several sample containers were not within specification for the sulfide analyses; the sample preservation was updated accordingly by the laboratory to meet required specifications. No qualification of the data was determined necessary.
- The laboratory noted in the case narrative for data package 2087761 that the sample container for sample BOP-88i-0220 was not within specification for the total organic carbon analysis; the sample preservation was updated accordingly by the laboratory to meet required specifications. No qualification of the data was determined necessary.

All analyses were performed as requested, with the following exceptions:

- Per separate communication with the laboratory, it was determined two sulfate results were reported for sample E-6-0220 due to an inadvertent initial analysis at the incorrect dilution factor. The original sample result was qualified as “do not report” (DNR), as indicated in Table 1.
- Per separate communication with the laboratory, it was determined the necessary dilution VOC reanalysis for sample BOP-77i-0220 was initially overlooked by the laboratory analyst. The laboratory reanalyzed the sample at a dilution outside the method-recommended hold time using a vial that contained headspace. The associated reported sample results were qualified as estimated (J, UJ), as indicated in Table 1.
- Upon review of the initial lab data package 2087761, the laboratory was requested to re-review the reported results for total and dissolved lead for select samples. The laboratory determined that several samples required re-extraction and reanalysis for total lead, and a revised lab data package was issued. Additional concerns were raised regarding the total lead concentration for sample BOP-74i-0220 upon review of the revised data package. The

laboratory then reanalyzed the sample in duplicate multiple times and reported them in a revised lab data package. The result from Trial 4 was selected for reporting during the validation process, primarily because it most closely matched historical results for this location. The other reported results were qualified as "do not report" (DNR), as indicated in Table 1.

No special cleanups or handling methods were requested.

Upon receipt by LLI, the sample container information was compared to the associated chain-of-custody and the cooler temperatures were recorded. The coolers were received with temperatures within the EPA-recommended limit of ≤6°C. No qualification of the data was necessary.

Holding Times

For all analyses and all samples, the time between sample collection, extraction (if applicable), and analysis was determined to be within EPA- and project-specified holding times, with the following, exceptions:

- Per the data package 2087203 case narrative, preserved vials were submitted for the MEEA analysis for sample E-7-0220; however, the pH at the time of the trial 1 analysis was 5, and at the times of the trial 2 and 3 analyses was 7. The higher pH decreased the hold time to 7 days; the sample was analyzed within the shortened hold time; no qualification of the data was necessary.
- Per the data package 2087761 case narrative, preserved vials were submitted for the MEEA analysis for sample BOP-88i-0220; however, the pH at the time of analysis was 5. The higher pH decreased the hold time to 7 days; the sample was analyzed within the shortened hold time; no qualification of the data was necessary.

Blank Results

Laboratory Method Blanks

At least one method blank was analyzed with each batch of samples for analysis. Target analytes were not detected at concentrations greater than the reporting limits in the associated method blanks. No qualification of the data was necessary.

Field Trip Blanks and Field Equipment Blanks

Eight trip blanks were submitted to the laboratory for VOC analysis with the sample batches. Target analytes were not detected at concentrations greater than the reporting limits in the trip blanks. No qualification of the data was necessary.

No field equipment blanks were submitted for analysis with these sample batches.

Surrogate Recoveries

Appropriate compounds were used as surrogate spikes for the organics analyses. Recovery values for the surrogate spikes were within the current laboratory-specified control limits for all project samples, with the following exceptions:

- Recovery of the surrogate o-terphenyl associated with the diesel- and motor oil-range petroleum hydrocarbons analysis of sample LAI-8-0220 in data package 2086956 were greater than the laboratory-specified control limits. The associated sample results were qualified as estimated (J), as indicated in Table 1.
- Recoveries of the surrogate propene associated with the MEEA initial analysis and reanalysis of sample E-7-0220 in data package 2087203 were greater than the laboratory-specified control limits. The reanalysis results were qualified as "do not report" (DNR), as indicated in Table 1. The reported detections from the initial analysis were qualified as estimated (J), as indicated in Table 1.
- Recovery of the surrogate propene associated with the initial MEEA analysis of sample BOP-88i-0220 in data package 2087761 was greater than the laboratory-specified control limits. The associated sample results were qualified as estimated (J), as indicated in Table 1.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) and Laboratory Replicate Results

At least one MS and/or laboratory replicate sample were analyzed with the conventional and/or metals parameters in data packages 2086723, 2086955, 2086956, 2087205, 2087461, and 2087761. The recovery values for each required spiking compound and/or the relative percent differences (RPDs) between the laboratory replicate results were within the current project-specified and/or laboratory-specified control limits for all project samples with the following exceptions:

- The laboratory duplicate RPDs for sulfate associated with the conventionals analysis of sample E-16-0220 in data package 2086723 and sample BOP-76i-0220 in data package 2087761 were greater than the laboratory-specified control limit. The associated sample result was qualified as estimated (J), as indicated in Table 1.
- The MS recovery for nitrate associated with the conventionals analysis of sample TowerEff-0220 in data package 2087205 was greater than the laboratory-specified control limits. The associated sample result was qualified as estimated (J), as indicated in Table 1.
- The MS recovery for sulfate associated with the conventionals analysis of sample BOP-81i-0220 in data package 2087461 was greater than the laboratory-specified control limits. Sulfate was not detected at a concentration greater than the reporting limit in the associated sample; therefore, no qualification of the data was necessary.
- The MS/MSD recoveries for iron associated with the total and dissolved metals analysis of sample BOP-75i-0220 in data package 2087461 and BOP-88i-0220 in data package 2087761 were both less than and greater than the laboratory-specified control limits. The original sample concentrations were more than four times greater than the spike concentration; no qualification of the data was necessary.

Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD) Results

At least one laboratory control sample and/or laboratory control sample duplicate (LCS/LCSD) was analyzed with each batch of samples for analysis. Recoveries and RPDs for the laboratory control

samples and associated duplicates were within the current laboratory-specified control limits, with the following exception:

- The LCS/LCSD recoveries for 1,2-dichloroethane associated with the VOC analyses in data packages 2086723, 2086955, 2086956, and 2087203 were greater than the laboratory-specified control limits. 1,2-Dichloroethane was not detected at a concentration greater than the reporting limit in the associated samples; therefore, no qualification of the data was necessary.

Blind Field Duplicate Results

As specified in the QAPP, blind field duplicate samples were collected at a rate of one blind field duplicate sample per 20 samples, but not less than one blind field duplicate per sampling round. Four pairs of blind field duplicate water samples (TowerInf-0220/TowerInD-0220, TowerEff-0220/TowerEfD-0220, BOP-y-0220/BOP-59i-0220, and BOP-x-0220/BOP-10i-0220) were submitted for analysis with data packages 2086723 and 2087203.

A project-specified control limit of 20 percent was used to evaluate the RPDs between the duplicate samples except when the sample results were within five times the reporting limit. In these cases, a project-specified control limit of plus or minus the reporting limit was used. RPDs for the duplicate sample pairs submitted for analysis were within the project-specified control limits, with the following exceptions:

- The RPD for tetrachloroethene associated with the VOC analysis of the field duplicate pair BOP-x-0220/BOP-10i-0220 in data package 2087203 was greater than the project-specified control limit. The associated sample results were qualified as estimated (J), as indicated in Table 1.

Total and Dissolved Metals Concentrations

The analytical results for total and dissolved metals were compared for each project sample. A project-specified control limit of 20 percent was used to evaluate the RPDs between the total and dissolved metals results, except when the sample results were within five times the reporting limit. In these cases, a project-specified control limit of plus or minus the reporting limit was used. The RPDs between the total and dissolved metals results were within the project-specified control limits for all project samples. No qualification of the data was necessary.

Quantitation Limits

Project-specified quantitation limits were met for all samples except for instances where dilution was performed due to the presence of high level target species or sample matrix interference.

In those instances when an analysis result exceeded the linear range of the instrument, the laboratory appended an “E” flag to the data, and reported a subsequent dilution analysis. For those samples, the “E” flagged result is qualified as “DNR” for Do Not Report, and the dilution analysis result is reported for that specific compound. For all other results, the original analysis results are reported because of the lower reporting limits, so the corresponding dilution analysis results are qualified as “DNR”.

Audit/Corrective Action Records

No corrective action records were generated for these sample batches. Based on the laboratory's case narratives, continuing calibration verification (CCV) recovery results were within laboratory-specified control limits, with the following exceptions:

- The CCV recovery was high for trichlorofluoromethane; , 1,1,1-trichloroethane; and carbon tetrachloride associated with the VOC analysis of multiple samples in data packages 2086723, 2086955, and 2087203. The affected compounds were not detected in the associated samples at concentrations greater than the laboratory reporting limits. No qualification of the data was necessary.
- The CCV recovery was high for several compounds associated with the VOC analysis of the trip blank in data package 2086956. The trip blank results will not be reported; no qualification of the data was necessary.
- The CCV recovery was low for chloromethane associated with the VOC analysis of sample BOP-77i-0220 in data package 2087461. The associated sample result was qualified as estimated (J, UJ), as indicated in Table 1.

The laboratory also noted the following:

- The case narrative indicated the internal standard recovery associated with the VOC analysis of sample DP1-0220 was low for both trials. The initial analytical results were qualified as estimated (J+, UJ), and the reanalysis results were qualified as "do not report" (DNR), as indicated in Table 1.
- The case narrative indicated the internal standard recovery associated with the trial 2 VOC analysis of sample E-7-0220 was outside the laboratory-specified control limits. The sample was reanalyzed (trial 3) and the internal standard recovery was again outside the laboratory-specified control limits. The sample was analyzed in a fourth trial due to "E" qualified data in trial 2. Results were reported from trial 2 to properly quantify "E" qualified data from trial 1, and were qualified as estimated (J), as indicated in Table 1. Results were reported from trial 4 to properly quantify "E" qualified data from trial 2, and were qualified as estimated (J), as indicated in Table 1. Results from trial 3 were qualified as "do not report" (DNR), as indicated in Table 1.
- The case narrative indicated the internal standard recoveries associated with the trial 2 (dilution analysis) and trial 3 (dilution reanalysis) VOC analysis of sample BOP-87i-0220 were outside the laboratory-specified control limits. Applicable results from trial 2 were reported as estimated (J), as indicated in Table 1. Results from trial 3 were qualified as "do not report" (DNR), as indicated in Table 1.

Completeness and Overall Data Quality

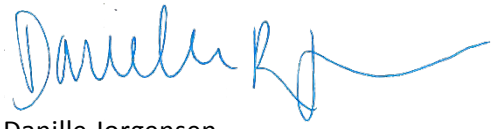
The completeness for this data set is 100 percent, which meets the project-specified goal of 90 percent minimum.

Data precision was evaluated through laboratory control sample duplicates, laboratory duplicates, matrix spike duplicates, and blind field duplicates. Data accuracy was evaluated through laboratory control samples, matrix spikes, and surrogate spikes. No data were rejected.

LANDAU ASSOCIATES, INC.



Kristi Schultz
Data Specialist



Danille Jorgensen
Environmental Data Manager

DRJ/kes
[P:\025\116\FILERM\T\TGA\DATA\DV MEMOS TGA\2020\1Q20\TGA 1Q20 TM.DOCX]

Attachments

Table 1. Summary of Data Qualifiers

References

EPA. 2016a. National Functional Guidelines for Inorganic Superfund Methods Data Review. edited by Office of Superfund Remediation and Technology Innovation (OSRTI). Washington, DC: US Environmental Protection Agency.

EPA. 2016b. National Functional Guidelines for Superfund Organic Methods Data Review. edited by Office of Superfund Remediation and Technology Innovation (OSRTI). Washington, DC: US Environmental Protection Agency.

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Analyte	Result	Lab Qualifier	Data Qualifier	Sample Number	Reason
2086723	Acetone	57		J+	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Benzene	2.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Bromodichloromethane	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Bromoform	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Bromomethane	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	2-Butanone	50	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Carbon Disulfide	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Carbon Tetrachloride	2.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Chlorobenzene	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Chloroethane	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Chloroform	2.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Chloromethane	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Dibromochloromethane	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	1,1-Dichloroethane	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	1,2-Dichloroethane	2.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	1,1-Dichloroethene	2.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	cis-1,2-Dichloroethene	2.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	trans-1,2-Dichloroethene	2.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	1,2-Dichloropropane	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	cis-1,3-Dichloropropene	2.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	trans-1,3-Dichloropropene	2.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Ethylbenzene	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	2-Hexanone	50	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	4-Methyl-2-pentanone	50	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Methylene Chloride	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Styrene	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	1,1,2,2-Tetrachloroethane	2.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Tetrachloroethene	2.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Toluene	2.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	1,1,1-Trichloroethane	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	1,1,2-Trichloroethane	2.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Trichloroethene	2.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Trichlorofluoromethane	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Vinyl Acetate	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Vinyl Chloride	2.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	m,p-Xylene	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	o-Xylene	5.0	U	UJ	DP1-0220 (orig)	Internal standard recovery outside control limits
2086723	Acetone	68		DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Benzene	2.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Bromodichloromethane	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Bromoform	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Bromomethane	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	2-Butanone	50	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Carbon Disulfide	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Carbon Tetrachloride	2.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Chlorobenzene	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Chloroethane	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Chloroform	2.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Chloromethane	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Dibromochloromethane	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	1,1-Dichloroethane	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	1,2-Dichloroethane	2.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	1,1-Dichloroethene	2.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	cis-1,2-Dichloroethene	2.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	trans-1,2-Dichloroethene	2.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	1,2-Dichloropropane	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	cis-1,3-Dichloropropene	2.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	trans-1,3-Dichloropropene	2.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Ethylbenzene	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	2-Hexanone	50	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	4-Methyl-2-pentanone	50	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Methylene Chloride	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Styrene	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	1,1,2,2-Tetrachloroethane	2.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Tetrachloroethene	2.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Toluene	2.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Analyte	Result	Lab Qualifier	Data Qualifier	Sample Number	Reason
2086723	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	1,1,1-Trichloroethane	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	1,1,2-Trichloroethane	2.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Trichloroethene	2.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Trichlorofluoromethane	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Vinyl Acetate	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	Vinyl Chloride	2.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	m,p-Xylene	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	o-Xylene	5.0	U	DNR	DP1-0220 (RE)	Do not report; use different analysis
2086723	cis-1,2-Dichloroethene	26	E	DNR	BOP-59i-0220 (orig)	Do not report; use dilution analysis
2086723	Acetone	50	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Benzene	2.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Bromodichloromethane	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Bromoform	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Bromomethane	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	2-Butanone	50	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Carbon Disulfide	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Carbon Tetrachloride	2.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Chlorobenzene	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Chloroethane	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Chloroform	2.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Chloromethane	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Dibromochloromethane	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	1,1-Dichloroethane	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	1,2-Dichloroethane	2.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	1,1-Dichloroethene	2.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	trans-1,2-Dichloroethene	2.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	1,2-Dichloropropane	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	cis-1,3-Dichloropropene	2.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	trans-1,3-Dichloropropene	2.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Ethylbenzene	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	2-Hexanone	50	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	4-Methyl-2-pentanone	50	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Methylene Chloride	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Styrene	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	1,1,2,2-Tetrachloroethane	2.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Tetrachloroethene	2.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Toluene	2.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	1,1,1-Trichloroethane	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	1,1,2-Trichloroethane	2.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Trichloroethene	2.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Trichlorofluoromethane	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Vinyl Acetate	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Vinyl Chloride	2.1		DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	m,p-Xylene	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	o-Xylene	5.0	U	DNR	BOP-59i-0220 (DL)	Do not report; use original analysis
2086723	Trichloroethene	26	E	DNR	E-4-0220 (orig)	Do not report; use dilution analysis
2086723	Acetone	50	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Benzene	2.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Bromodichloromethane	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Bromoform	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Bromomethane	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	2-Butanone	50	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Carbon Disulfide	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Carbon Tetrachloride	2.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Chlorobenzene	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Chloroethane	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Chloroform	2.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Chloromethane	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Dibromochloromethane	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	1,1-Dichloroethane	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	1,2-Dichloroethane	2.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	1,1-Dichloroethene	2.7		DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	cis-1,2-Dichloroethene	2.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	trans-1,2-Dichloroethene	2.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	1,2-Dichloropropane	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Analyte	Result	Lab Qualifier	Data Qualifier	Sample Number	Reason
2086723	cis-1,3-Dichloropropene	2.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	trans-1,3-Dichloropropene	2.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Ethylbenzene	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	2-Hexanone	50	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	4-Methyl-2-pentanone	50	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Methylene Chloride	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Styrene	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	1,1,2,2-Tetrachloroethane	2.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Tetrachloroethene	2.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Toluene	2.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	1,1,1-Trichloroethane	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	1,1,2-Trichloroethane	2.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Trichlorofluoromethane	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Vinyl Acetate	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	Vinyl Chloride	2.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	m,p-Xylene	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	o-Xylene	5.0	U	DNR	E-4-0220 (DL)	Do not report; use original analysis
2086723	cis-1,2-Dichloroethene	26	E	DNR	BOP-y-0220 (orig)	Do not report; use dilution analysis
2086723	Acetone	50	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Benzene	2.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Bromodichloromethane	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Bromoform	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Bromomethane	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	2-Butanone	50	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Carbon Disulfide	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Carbon Tetrachloride	2.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Chlorobenzene	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Chloroethane	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Chloroform	2.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Chloromethane	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Dibromochloromethane	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	1,1-Dichloroethane	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	1,2-Dichloroethane	2.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	1,1-Dichloroethene	2.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	trans-1,2-Dichloroethene	2.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	1,2-Dichloropropane	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	cis-1,3-Dichloropropene	2.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	trans-1,3-Dichloropropene	2.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Ethylbenzene	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	2-Hexanone	50	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	4-Methyl-2-pentanone	50	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Methylene Chloride	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Styrene	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	1,1,2,2-Tetrachloroethane	2.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Tetrachloroethene	2.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Toluene	2.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	1,1,1-Trichloroethane	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	1,1,2-Trichloroethane	2.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Trichloroethene	2.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Trichlorofluoromethane	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Vinyl Acetate	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Vinyl Chloride	2.3		DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	m,p-Xylene	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	o-Xylene	5.0	U	DNR	BOP-y-0220 (DL)	Do not report; use original analysis
2086723	Methane	13000	E	DNR	DP1-0220	Do not report; use dilution analysis
2086723	Acetylene	500	U	DNR	DP1-0220	Do not report; use original analysis
2086723	Ethane	500	U	DNR	DP1-0220	Do not report; use original analysis
2086723	Ethene	500	U	DNR	DP1-0220	Do not report; use original analysis
2086723	Methane	7500	E	DNR	E-15-0220	Do not report; use dilution analysis
2086723	Acetylene	250	U	DNR	E-15-0220	Do not report; use original analysis
2086723	Ethane	250	U	DNR	E-15-0220	Do not report; use original analysis
2086723	Ethene	250	U	DNR	E-15-0220	Do not report; use original analysis
2086723	Methane	9000	E	DNR	E-16-0220	Do not report; use dilution analysis
2086723	Acetylene	250	U	DNR	E-16-0220	Do not report; use original analysis
2086723	Ethane	250	U	DNR	E-16-0220	Do not report; use original analysis

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Analyte	Result	Lab Qualifier	Data Qualifier	Sample Number	Reason
2086723	Ethene	250	U	DNR	E-16-0220	Do not report; use original analysis
2086723	Methane	12000	E	DNR	E-3-0220	Do not report; use dilution analysis
2086723	Acetylene	500	U	DNR	E-3-0220	Do not report; use original analysis
2086723	Ethane	500	U	DNR	E-3-0220	Do not report; use original analysis
2086723	Ethene	500	U	DNR	E-3-0220	Do not report; use original analysis
2086723	Sulfate	1.5		J	E-16-0220	High laboratory duplicate RPD
2086955	Methane	2100	E	DNR	BOP-16i-0220	Do not report; use dilution analysis
2086955	Acetylene	50	U	DNR	BOP-16i-0220	Do not report; use original analysis
2086955	Ethane	50	U	DNR	BOP-16i-0220	Do not report; use original analysis
2086955	Ethene	50	U	DNR	BOP-16i-0220	Do not report; use original analysis
2086955	2-Butanone	260	E	DNR	BOP-84i-0220 (orig)	Do not report; use dilution analysis
2086955	Acetone	210		DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Benzene	3.3		DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Bromodichloromethane	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Bromoform	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Bromomethane	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Carbon Disulfide	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Carbon Tetrachloride	2.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Chlorobenzene	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Chloroethane	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Chloroform	2.2		DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Chloromethane	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Dibromochloromethane	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	1,1-Dichloroethane	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	1,2-Dichloroethane	2.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	1,1-Dichloroethene	2.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	cis-1,2-Dichloroethene	2.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	trans-1,2-Dichloroethene	2.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	1,2-Dichloropropane	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	cis-1,3-Dichloropropene	2.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	trans-1,3-Dichloropropene	2.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Ethylbenzene	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	2-Hexanone	50	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	4-Methyl-2-pentanone	50	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Methylene Chloride	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Styrene	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	1,1,2,2-Tetrachloroethane	2.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Tetrachloroethene	2.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Toluene	2.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	1,1,1-Trichloroethane	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	1,1,2-Trichloroethane	2.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Trichloroethene	2.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Trichlorofluoromethane	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Vinyl Acetate	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	Vinyl Chloride	2.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	m,p-Xylene	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	o-Xylene	5.0	U	DNR	BOP-84i-0220 (DL)	Do not report; use original analysis
2086955	2-Butanone	820	E	DNR	BOP-85i-0220 (orig)	Do not report; use dilution analysis
2086955	Acetone	50	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Benzene	2.3		DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Bromodichloromethane	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Bromoform	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Bromomethane	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Carbon Disulfide	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Carbon Tetrachloride	2.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Chlorobenzene	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Chloroethane	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Chloroform	4.9		DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Chloromethane	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Dibromochloromethane	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	1,1-Dichloroethane	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	1,2-Dichloroethane	2.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	1,1-Dichloroethene	2.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	cis-1,2-Dichloroethene	2.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	trans-1,2-Dichloroethene	2.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Analyte	Result	Lab Qualifier	Data Qualifier	Sample Number	Reason
2086955	1,2-Dichloropropane	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	cis-1,3-Dichloropropene	2.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	trans-1,3-Dichloropropene	2.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Ethylbenzene	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	2-Hexanone	50	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	4-Methyl-2-pentanone	50	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Methylene Chloride	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Styrene	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	1,1,2,2-Tetrachloroethane	2.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Tetrachloroethene	2.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Toluene	2.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	1,1,1-Trichloroethane	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	1,1,2-Trichloroethane	2.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Trichloroethene	2.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Trichlorofluoromethane	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Vinyl Acetate	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Vinyl Chloride	2.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	m,p-Xylene	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	o-Xylene	5.0	U	DNR	BOP-85i-0220 (DL)	Do not report; use original analysis
2086955	Acetone	330	E	DNR	BOP-86i-0220 (orig)	Do not report; use dilution analysis
2086955	2-Butanone	850	E	DNR	BOP-86i-0220 (orig)	Do not report; use dilution analysis
2086955	Benzene	2.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Bromodichloromethane	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Bromoform	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Bromomethane	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Carbon Disulfide	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Carbon Tetrachloride	2.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Chlorobenzene	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Chloroethane	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Chloroform	2.4		DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Chloromethane	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Dibromochloromethane	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	1,1-Dichloroethane	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	1,2-Dichloroethane	2.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	1,1-Dichloroethene	2.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	cis-1,2-Dichloroethene	2.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	trans-1,2-Dichloroethene	2.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	1,2-Dichloropropane	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	cis-1,3-Dichloropropene	2.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	trans-1,3-Dichloropropene	2.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Ethylbenzene	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	2-Hexanone	59		DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	4-Methyl-2-pentanone	50	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Methylene Chloride	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Styrene	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	1,1,2,2-Tetrachloroethane	2.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Tetrachloroethene	2.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Toluene	2.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	1,1,1-Trichloroethane	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	1,1,2-Trichloroethane	2.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Trichloroethene	2.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Trichlorofluoromethane	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Vinyl Acetate	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	Vinyl Chloride	2.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	m,p-Xylene	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086955	o-Xylene	5.0	U	DNR	BOP-86i-0220 (DL)	Do not report; use original analysis
2086956	Diesel/#2Fuel	280		J	LAI-8-0220	High surrogate recovery
2086956	DRO C12-C24	230		J	LAI-8-0220	High surrogate recovery
2086956	Motor Oil	460		J	LAI-8-0220	High surrogate recovery
2087203	Vinyl Chloride	85	E	DNR	E-6-0220 (orig)	Do not report; use dilution analysis
2087203	Acetone	50	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Benzene	2.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Bromodichloromethane	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Bromoform	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Analyte	Result	Lab Qualifier	Data Qualifier	Sample Number	Reason
2087203	Bromomethane	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	2-Butanone	50	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Carbon Disulfide	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Carbon Tetrachloride	2.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Chlorobenzene	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Chloroethane	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Chloroform	2.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Chloromethane	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Dibromochloromethane	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	1,1-Dichloroethane	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	1,2-Dichloroethane	2.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	1,1-Dichloroethene	2.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	cis-1,2-Dichloroethene	6.3		DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	trans-1,2-Dichloroethene	2.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	1,2-Dichloropropane	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	cis-1,3-Dichloropropene	2.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	trans-1,3-Dichloropropene	2.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Ethylbenzene	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	2-Hexanone	50	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	4-Methyl-2-pentanone	50	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Methylene Chloride	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Styrene	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	1,1,2,2-Tetrachloroethane	2.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Tetrachloroethene	2.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Toluene	2.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	1,1,1-Trichloroethane	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	1,1,2-Trichloroethane	2.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Trichloroethene	2.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Trichlorofluoromethane	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Vinyl Acetate	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	m,p-Xylene	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	o-Xylene	5.0	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	2-Butanone	2700	E	DNR	E-7-0220 (orig)	Do not report; use dilution analysis
2087203	Trichloroethene	27	E	DNR	E-7-0220 (orig)	Do not report; use dilution analysis
2087203	Acetone	100		DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Benzene	2.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Bromodichloromethane	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Bromoform	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Bromomethane	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	2-Butanone	5100	E	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Carbon Disulfide	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Carbon Tetrachloride	2.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Chlorobenzene	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Chloroethane	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Chloroform	2.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Chloromethane	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Dibromochloromethane	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	1,1-Dichloroethane	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	1,2-Dichloroethane	2.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	1,1-Dichloroethene	2.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	cis-1,2-Dichloroethene	19		DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	trans-1,2-Dichloroethene	2.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	1,2-Dichloropropane	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	cis-1,3-Dichloropropene	2.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	trans-1,3-Dichloropropene	2.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Ethylbenzene	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	2-Hexanone	160		DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	4-Methyl-2-pentanone	50	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Methylene Chloride	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Styrene	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	1,1,2,2-Tetrachloroethane	2.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Tetrachloroethene	4.5		DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Toluene	2.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	1,1,1-Trichloroethane	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	1,1,2-Trichloroethane	2.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Analyte	Result	Lab Qualifier	Data Qualifier	Sample Number	Reason
2087203	Trichloroethene	27		J	E-7-0220 (DL)	Internal standard recovery outside control limits
2087203	Trichlorofluoromethane	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Vinyl Acetate	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Vinyl Chloride	2.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	m,p-Xylene	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	o-Xylene	5.0	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Acetone	500	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Benzene	20	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Bromodichloromethane	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Bromoform	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Bromomethane	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	2-Butanone	5400	J		E-7-0220 (DL2)	Internal standard recovery outside control limits; vial used for analysis contained headspace
2087203	Carbon Disulfide	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Carbon Tetrachloride	20	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Chlorobenzene	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Chloroethane	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Chloroform	20	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Chloromethane	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Dibromochloromethane	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	1,1-Dichloroethane	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	1,2-Dichloroethane	20	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	1,1-Dichloroethene	20	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	cis-1,2-Dichloroethene	21		DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	trans-1,2-Dichloroethene	20	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	1,2-Dichloropropane	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	cis-1,3-Dichloropropene	20	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	trans-1,3-Dichloropropene	20	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Ethylbenzene	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	2-Hexanone	500	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	4-Methyl-2-pentanone	500	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Methylene Chloride	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Styrene	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	1,1,2,2-Tetrachloroethane	20	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Tetrachloroethene	20		DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Toluene	20	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	1,1,2-Trichloro-1,2,2-trifluoroethane	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	1,1,1-Trichloroethane	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	1,1,2-Trichloroethane	20	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Trichloroethene	29		DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Trichlorofluoromethane	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Vinyl Acetate	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Vinyl Chloride	20	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	m,p-Xylene	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	o-Xylene	50	U	DNR	E-7-0220 (DL2)	Do not report; use original analysis
2087203	Acetone	130		DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Benzene	2.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Bromodichloromethane	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Bromoform	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Bromomethane	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	2-Butanone	5300	E	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Carbon Disulfide	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Carbon Tetrachloride	2.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Chlorobenzene	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Chloroethane	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Chloroform	2.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Chloromethane	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Dibromochloromethane	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	1,1-Dichloroethane	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	1,2-Dichloroethane	2.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	1,1-Dichloroethene	2.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	cis-1,2-Dichloroethene	20		DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	trans-1,2-Dichloroethene	2.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	1,2-Dichloropropane	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	cis-1,3-Dichloropropene	2.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	trans-1,3-Dichloropropene	2.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Analyte	Result	Lab Qualifier	Data Qualifier	Sample Number	Reason
2087203	Ethylbenzene	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	2-Hexanone	140		DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	4-Methyl-2-pentanone	50	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Methylene Chloride	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Styrene	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	1,1,2,2-Tetrachloroethane	2.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Tetrachloroethene	4.9		DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Toluene	2.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	1,1,1-Trichloroethane	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	1,1,2-Trichloroethane	2.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Trichloroethene	27		DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Trichlorofluoromethane	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Vinyl Acetate	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	Vinyl Chloride	2.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	m,p-Xylene	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	o-Xylene	5.0	U	DNR	E-7-0220 (DLRE)	Do not report; use different analysis
2087203	2-Butanone	840	E	DNR	BOP-9i-0220 (orig)	Do not report; use dilution analysis
2087203	Toluene	100	E	DNR	BOP-9i-0220 (orig)	Do not report; use dilution analysis
2087203	Acetone	50	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Benzene	2.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Bromodichloromethane	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Bromoform	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Bromomethane	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Carbon Disulfide	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Carbon Tetrachloride	2.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Chlorobenzene	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Chloroethane	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Chloroform	2.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Chloromethane	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Dibromochloromethane	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	1,1-Dichloroethane	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	1,2-Dichloroethane	2.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	1,1-Dichloroethene	2.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	cis-1,2-Dichloroethene	2.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	trans-1,2-Dichloroethene	2.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	1,2-Dichloropropane	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	cis-1,3-Dichloropropene	2.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	trans-1,3-Dichloropropene	2.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Ethylbenzene	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	2-Hexanone	50	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	4-Methyl-2-pentanone	50	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Methylene Chloride	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Styrene	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	1,1,2,2-Tetrachloroethane	2.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Tetrachloroethene	2.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	1,1,1-Trichloroethane	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	1,1,2-Trichloroethane	2.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Trichloroethene	2.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Trichlorofluoromethane	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Vinyl Acetate	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Vinyl Chloride	2.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	m,p-Xylene	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	o-Xylene	5.0	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Trichloroethene	26	E	DNR	BOP-10i-0220 (orig)	Do not report; use dilution analysis
2087203	Tetrachloroethene	4.7		J	BOP-10i-0220 (orig)	High field duplicate RPD
2087203	Acetone	50	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Benzene	2.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Bromodichloromethane	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Bromoform	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Bromomethane	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	2-Butanone	230		DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Carbon Disulfide	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Carbon Tetrachloride	2.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Chlorobenzene	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Chloroethane	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Analyte	Result	Lab Qualifier	Data Qualifier	Sample Number	Reason
2087203	Chloroform	2.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Chloromethane	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Dibromochloromethane	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	1,1-Dichloroethane	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	1,2-Dichloroethane	2.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	1,1-Dichloroethene	2.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	cis-1,2-Dichloroethene	8.9		DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	trans-1,2-Dichloroethene	2.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	1,2-Dichloropropane	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	cis-1,3-Dichloropropene	2.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	trans-1,3-Dichloropropene	2.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Ethylbenzene	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	2-Hexanone	50	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	4-Methyl-2-pentanone	50	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Methylene Chloride	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Styrene	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	1,1,2,2-Tetrachloroethane	2.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Tetrachloroethene	5.5		DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Toluene	2.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	1,1,1-Trichloroethane	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	1,1,2-Trichloroethane	2.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Trichlorofluoromethane	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Vinyl Acetate	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Vinyl Chloride	2.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	m,p-Xylene	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	o-Xylene	5.0	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Trichloroethene	27	E	DNR	BOP-X-0220 (orig)	Do not report; use dilution analysis
2087203	Tetrachloroethene	6.7		J	BOP-X-0220 (orig)	High field duplicate RPD
2087203	Acetone	50	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Benzene	2.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Bromodichloromethane	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Bromoform	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Bromomethane	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	2-Butanone	180		DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Carbon Disulfide	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Carbon Tetrachloride	2.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Chlorobenzene	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Chloroethane	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Chloroform	2.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Chloromethane	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Dibromochloromethane	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	1,1-Dichloroethane	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	1,2-Dichloroethane	2.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	1,1-Dichloroethene	2.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	cis-1,2-Dichloroethene	7.4		DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	trans-1,2-Dichloroethene	2.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	1,2-Dichloropropane	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	cis-1,3-Dichloropropene	2.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	trans-1,3-Dichloropropene	2.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Ethylbenzene	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	2-Hexanone	50	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	4-Methyl-2-pentanone	50	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Methylene Chloride	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Styrene	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	1,1,2,2-Tetrachloroethane	2.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Tetrachloroethene	6.1		DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Toluene	2.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	1,1,1-Trichloroethane	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	1,1,2-Trichloroethane	2.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Trichlorofluoromethane	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Vinyl Acetate	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Vinyl Chloride	2.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	m,p-Xylene	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	o-Xylene	5.0	U	DNR	BOP-X-0220 (DL)	Do not report; use original analysis
2087203	Methane	4100	E	DNR	E-6-0220 (orig)	Do not report; use dilution analysis

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Analyte	Result	Lab Qualifier	Data Qualifier	Sample Number	Reason
2087203	Acetylene	100	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Ethane	100	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Ethene	100	U	DNR	E-6-0220 (DL)	Do not report; use original analysis
2087203	Methane	9400	E	DNR	E-7-0220 (orig)	Do not report; use dilution analysis
2087203	Ethene	5.2		J	E-7-0220 (orig)	High surrogate recovery
2087203	Acetylene	250	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Ethane	250	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Ethene	250	U	DNR	E-7-0220 (DL)	Do not report; use original analysis
2087203	Methane	7800	E	DNR	E-7-0220 (RE)	Do not report; use different analysis
2087203	Acetylene	5.0	U	DNR	E-7-0220 (RE)	Do not report; use different analysis
2087203	Ethane	5.0	U	DNR	E-7-0220 (RE)	Do not report; use different analysis
2087203	Ethene	5.3		DNR	E-7-0220 (RE)	Do not report; use different analysis
2087203	Methane	19000	E	DNR	BOP-9i-0220 (orig)	Do not report; use dilution analysis
2087203	Acetylene	500	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Ethane	500	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Ethene	500	U	DNR	BOP-9i-0220 (DL)	Do not report; use original analysis
2087203	Methane	5300	E	DNR	BOP-10i-0220 (orig)	Do not report; use dilution analysis
2087203	Acetylene	250	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Ethane	250	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Ethene	250	U	DNR	BOP-10i-0220 (DL)	Do not report; use original analysis
2087203	Sulfate	5.0	U	DNR	E-6-0220	Do not report; use different analysis
2087205	Nitrate Nitrogen	1.5		J	TowerEff-0220	Low matrix spike recovery
2087461	cis-1,2-Dichloroethene	760	E	DNR	BOP-73i-0220 (orig)	Do not report; use dilution analysis
2087461	Vinyl Chloride	1600	E	DNR	BOP-73i-0220 (orig)	Do not report; use dilution analysis
2087461	Acetone	1000	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Benzene	40	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Bromodichloromethane	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Bromoform	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Bromomethane	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	2-Butanone	1000	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Carbon Disulfide	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Carbon Tetrachloride	40	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Chlorobenzene	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Chloroethane	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Chloroform	40	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Chloromethane	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Dibromochloromethane	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	1,1-Dichloroethane	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	1,2-Dichloroethane	40	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	1,1-Dichloroethene	40	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	trans-1,2-Dichloroethene	57		DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	1,2-Dichloropropane	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	cis-1,3-Dichloropropene	40	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	trans-1,3-Dichloropropene	40	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Ethylbenzene	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	2-Hexanone	1000	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	4-Methyl-2-pentanone	1000	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Methylene Chloride	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Styrene	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	1,1,2,2-Tetrachloroethane	40	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Tetrachloroethene	40		DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Toluene	40	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	1,1,2-Trichloro-1,2,2-trifluoroethane	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	1,1,1-Trichloroethane	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	1,1,2-Trichloroethane	40	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Trichloroethene	40		DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Trichlorofluoromethane	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Vinyl Acetate	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	m,p-Xylene	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	o-Xylene	100	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Toluene	140	E	DNR	BOP-77i-0220 (orig)	Do not report; use dilution analysis
2087461	Acetone	55		DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Benzene	2.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Bromodichloromethane	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Bromoform	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Bromomethane	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Analyte	Result	Lab Qualifier	Data Qualifier	Sample Number	Reason
2087461	2-Butanone	66		DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Carbon Disulfide	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Carbon Tetrachloride	2.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Chlorobenzene	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Chloroethane	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Chloroform	2.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Chloromethane	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Dibromochloromethane	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	1,1-Dichloroethane	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	1,2-Dichloroethane	2.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	1,1-Dichloroethene	2.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	cis-1,2-Dichloroethene	6.7		DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	trans-1,2-Dichloroethene	2.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	1,2-Dichloropropane	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	cis-1,3-Dichloropropene	2.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	trans-1,3-Dichloropropene	2.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Ethylbenzene	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	2-Hexanone	50	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	4-Methyl-2-pentanone	50	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Methylene Chloride	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Styrene	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	1,1,2,2-Tetrachloroethane	2.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Tetrachloroethene	2.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Toluene	170		J	BOP-77i-0220 (DL)	Analyzes outside hold time; analysis completed from vial containing headspace
2087461	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	1,1,1-Trichloroethane	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	1,1,2-Trichloroethane	2.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Trichloroethene	2.0		DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Trichlorofluoromethane	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Vinyl Acetate	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Vinyl Chloride	2.9		DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	m,p-Xylene	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	o-Xylene	5.0	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Chloromethane	0.5	U	UJ	BOP-81i-0220	Low continuing calibration recovery
2087461	Methane	12000	E	DNR	BOP-72i-0220 (orig)	Do not report; use dilution analysis
2087461	Acetylene	500	U	DNR	BOP-72i-0220 (DL)	Do not report; use original analysis
2087461	Ethane	500	U	DNR	BOP-72i-0220 (DL)	Do not report; use original analysis
2087461	Ethene	500	U	DNR	BOP-72i-0220 (DL)	Do not report; use original analysis
2087461	Methane	12000	E	DNR	BOP-73i-0220 (orig)	Do not report; use dilution analysis
2087461	Ethene	2100	E	DNR	BOP-73i-0220 (orig)	Do not report; use dilution analysis
2087461	Acetylene	500	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Ethane	500	U	DNR	BOP-73i-0220 (DL)	Do not report; use original analysis
2087461	Methane	17000	E	DNR	BOP-75i-0220 (orig)	Do not report; use dilution analysis
2087461	Acetylene	500	U	DNR	BOP-75i-0220 (DL)	Do not report; use original analysis
2087461	Ethane	500	U	DNR	BOP-75i-0220 (DL)	Do not report; use original analysis
2087461	Ethene	500	U	DNR	BOP-75i-0220 (DL)	Do not report; use original analysis
2087461	Methane	16000	E	DNR	BOP-77i-0220 (orig)	Do not report; use dilution analysis
2087461	Acetylene	500	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Ethane	500	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Ethene	500	U	DNR	BOP-77i-0220 (DL)	Do not report; use original analysis
2087461	Methane	13000	E	DNR	BOP-80i-0220 (orig)	Do not report; use dilution analysis
2087461	Acetylene	500	U	DNR	BOP-80i-0220 (DL)	Do not report; use original analysis
2087461	Ethane	500	U	DNR	BOP-80i-0220 (DL)	Do not report; use original analysis
2087461	Ethene	500	U	DNR	BOP-80i-0220 (DL)	Do not report; use original analysis
2087461	Methane	17000	E	DNR	BOP-81i-0220 (orig)	Do not report; use dilution analysis
2087461	Acetylene	500	U	DNR	BOP-81i-0220 (DL)	Do not report; use original analysis
2087461	Ethane	500	U	DNR	BOP-81i-0220 (DL)	Do not report; use original analysis
2087461	Ethene	500	U	DNR	BOP-81i-0220 (DL)	Do not report; use original analysis
2087461	Methane	950	E	DNR	BOP-82i-0220 (orig)	Do not report; use dilution analysis
2087461	Acetylene	25	U	DNR	BOP-82i-0220 (DL)	Do not report; use original analysis
2087461	Ethane	25	U	DNR	BOP-82i-0220 (DL)	Do not report; use original analysis
2087461	Ethene	25	U	DNR	BOP-82i-0220 (DL)	Do not report; use original analysis
2087761	Methane	15000	E	DNR	BOP-74i-0220 (orig)	Do not report; use dilution analysis
2087761	Acetylene	500	U	DNR	BOP-74i-0220 (DL)	Do not report; use original analysis
2087761	Ethane	500	U	DNR	BOP-74i-0220 (DL)	Do not report; use original analysis

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Analyte	Result	Lab Qualifier	Data Qualifier	Sample Number	Reason
2087761	Ethene	500	U	DNR	BOP-74i-0220 (DL)	Do not report; use original analysis
2087761	Methane	15000	E	DNR	BOP-76i-0220 (orig)	Do not report; use dilution analysis
2087761	Acetylene	500	U	DNR	BOP-76i-0220 (DL)	Do not report; use original analysis
2087761	Ethane	500	U	DNR	BOP-76i-0220 (DL)	Do not report; use original analysis
2087761	Ethene	500	U	DNR	BOP-76i-0220 (DL)	Do not report; use original analysis
2087761	Methane	12000	E	DNR	BOP-88i-0220 (orig)	Do not report; use dilution analysis
2087761	Ethene	49		J	BOP-88i-0220 (orig)	High surrogate recovery
2087761	Acetylene	250	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Ethane	250	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Ethene	250	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Acetone	270	E	DNR	BOP-88i-0220 (orig)	Do not report; use dilution analysis
2087761	2-Butanone	1900	E	DNR	BOP-88i-0220 (orig)	Do not report; use dilution analysis
2087761	cis-1,2-Dichloroethene	160	E	DNR	BOP-88i-0220 (orig)	Do not report; use dilution analysis
2087761	Trichloroethene	28	E	DNR	BOP-88i-0220 (orig)	Do not report; use dilution analysis
2087761	Vinyl Chloride	29	E	DNR	BOP-88i-0220 (orig)	Do not report; use dilution analysis
2087761	Benzene	4.0	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Bromodichloromethane	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Bromoform	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Bromomethane	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Carbon Disulfide	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Carbon Tetrachloride	4.0	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Chlorobenzene	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Chloroethane	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Chloroform	4.0	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Chloromethane	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Dibromochloromethane	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	1,1-Dichloroethane	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	1,2-Dichloroethane	4.0	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	1,1-Dichloroethene	4.0	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	trans-1,2-Dichloroethene	4.0	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	1,2-Dichloropropane	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	cis-1,3-Dichloropropene	4.0	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	trans-1,3-Dichloropropene	4.0	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Ethylbenzene	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	2-Hexanone	150		DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	4-Methyl-2-pentanone	100	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Methylene Chloride	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Styrene	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	1,1,2,2-Tetrachloroethane	4.0	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Tetrachloroethene	4.0	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Toluene	4.0	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	1,1,1-Trichloroethane	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	1,1,2-Trichloroethane	4.0	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Trichlorofluoromethane	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Vinyl Acetate	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	m,p-Xylene	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	o-Xylene	10	U	DNR	BOP-88i-0220 (DL)	Do not report; use original analysis
2087761	Total Lead	69.5		DNR	BOP-74i-0220	Do not report; use dilution analysis
2087761	Total Lead	53.2		DNR	BOP-74i-0220	Do not report; use dilution analysis

E = concentration exceeds the calibration range

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.

DNR = do not report

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 9U4-26
Seattle WA 98124-2207

Report Date: February 19, 2020 12:56

Project: Boeing of Portland/0025116.120.412

Account #: 13419
Group Number: 2086723
PO Number: 0025116.120.412
State of Sample Origin: OR

Electronic Copy To	Landau	Attn: Chris Kimmel
Electronic Copy To	Landau Associates	Attn: Dani Jorgensen
Electronic Copy To	Landau	Attn: Erin Waibel
Electronic Copy To	Landau Associates	Attn: Laura Lafferty

Respectfully Submitted,

Kay Hower

(717) 556-7364

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
BOP-07d(148)-0226 Water	02/05/2020 14:20	1254933
E-13-0220 Water	02/05/2020 12:50	1254934
DP1-0220 Water	02/06/2020 09:15	1254935
BOP-59i-0220 Water	02/06/2020 09:40	1254936
E-15-0220 Water	02/06/2020 13:30	1254937
E-16-0220 Water	02/06/2020 10:35	1254938
E-4-0220 Water	02/06/2020 12:00	1254939
E-4-0220 Total Metals Water	02/06/2020 12:00	1254940
E-4-0220 Dissolved Metals Water	02/06/2020 12:00	1254941
E-3-0220 Water	02/06/2020 12:50	1254942
E-3-0220 Total Metals Water	02/06/2020 12:50	1254943
E-3-0220 Dissolved Metals Water	02/06/2020 12:50	1254944
BOP-56i-0220 Water	02/06/2020 14:10	1254945
BOP-Y-0220 Water	02/06/2020 10:00	1254946
BOP-57ia-0220 Water	02/06/2020 10:57	1254947
Trip Blanks Water	02/06/2020	1254948

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Project Name: Boeing of Portland/0025116.120.412
ELLE Group #: 2086723

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

SW-846 8260C 25mL purge, GC/MS Volatiles

Sample #s: 1254933, 1254934, 1254937, 1254938, 1254942, 1254945, 1254947, 1254948

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	26
1,1,1-trichloroethane	21
carbon tetrachloride	22

Sample #s: 1254936, 1254939, 1254946

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in trial 1 of this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	26
1,1,1-trichloroethane	21
carbon tetrachloride	22

The analysis was repeated and the continuing calibration verification standard bracketing the sample on the second trial is also outside the acceptance limits.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24

1,1,1-trichloroethane	23
carbon tetrachloride	24

Sample #s: 1254935

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in trial 1 of this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	26
1,1,1-trichloroethane	21
carbon tetrachloride	22

The analysis was repeated and the continuing calibration verification standard bracketing the sample on the second trial is also outside the acceptance limits.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

Reporting limits were raised due to interference from the sample matrix.

The GC/MS volatile internal standard peak areas listed below are outside the acceptance criteria of -50% to +100% for both trial 1 and trial 2.

Internal Standard - trial 1	% Recovery
tert-Butyl Alcohol-d10	-54

Internal Standard - trial 2	% Recovery
tert-Butyl Alcohol-d10	-53

Batch #: I200491AA (Sample number(s): 1254935-1254936, 1254939, 1254946)

The recovery(ies) for the following analyte(s) in the LCS and/or LCSD exceeded the acceptance window indicating a positive bias: 1,2-Dichloroethane

EPA 300.0, Wet Chemistry

Batch #: 20038076115A (Sample number(s): 1254935, 1254937-1254939, 1254942 UNSPK: 1254938 BKG: 1254938)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Sulfate, Nitrate Nitrogen

Sample Description: **BOP-07d(148)-0226 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/05/2020 14:20

The Boeing Company
ELLE Sample #: WW 1254933
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**11**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.7**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.3**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**1**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	26
1,1,1-trichloroethane	21
carbon tetrachloride	22

Sample Description: **BOP-07d(148)-0226 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/05/2020 14:20

The Boeing Company
ELLE Sample #: WW 1254933
ELLE Group #: 2086723
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200431AA	02/12/2020 14:07	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200431AA	02/12/2020 14:06	Jennifer K Howe	1

Sample Description: **E-13-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/05/2020 12:50

The Boeing Company
ELLE Sample #: WW 1254934
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**1.9**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.7**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**0.3**		0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**9.0**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.3**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	26
1,1,1-trichloroethane	21
carbon tetrachloride	22

Sample Description: **E-13-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/05/2020 12:50

The Boeing Company
ELLE Sample #: WW 1254934
ELLE Group #: 2086723
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200431AA	02/12/2020 14:29	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200431AA	02/12/2020 14:28	Jennifer K Howe	1

Sample Description: **DP1-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 09:15

The Boeing Company
ELLE Sample #: WW 1254935
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**57**		50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	2-Butanone	78-93-3	50	U	50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10
Trial ID: RE						
11996	**Acetone**	67-64-1	**68**		50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	2-Butanone	78-93-3	50	U	50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10

Sample Description: **DP1-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 09:15

The Boeing Company
ELLE Sample #: WW 1254935
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in trial 1 of this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	26
1,1,1-trichloroethane	21
carbon tetrachloride	22

The analysis was repeated and the continuing calibration verification standard bracketing the sample on the second trial is also outside the acceptance limits.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23

Sample Description: **DP1-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 09:15

The Boeing Company
ELLE Sample #: WW 1254935
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
	carbon tetrachloride 24				

Reporting limits were raised due to interference from the sample matrix.

The GC/MS volatile internal standard peak areas listed below are outside the acceptance criteria of -50% to +100% for both trial 1 and trial 2.

Internal Standard - trial 1	% Recovery
tert-Butyl Alcohol-d10	-54

Internal Standard - trial 2	% Recovery
tert-Butyl Alcohol-d10	-53

GC Miscellaneous		**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**13,000 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	500 U	500	100
07105	Ethane	74-84-0	500 U	500	100
07105	Ethene	74-85-1	500 U	500	100
07105	**Methane**	74-82-8	**19,000**	500	100
Wet Chemistry		**EPA 300.0**	**mg/l**	**mg/l**	
00228	Sulfate	14808-79-8	1.0 U	1.0	1
		SM 5310 C-2011	**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**346**	250	250

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200431AA	02/12/2020 17:40	Jennifer K Howe	10
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-RE	I200491AA	02/18/2020 17:45	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200431AA	02/12/2020 17:39	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	2	I200491AA	02/18/2020 17:44	Jennifer K Howe	10
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200430013A	02/12/2020 13:47	Esther Kathryn Lane	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200430013A	02/13/2020 21:04	Esther Kathryn Lane	100
00228	Sulfate	EPA 300.0	1	20038076115A	02/07/2020 22:50	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20045304502A	02/14/2020 15:33	Bethany Sandone	250

Sample Description: **BOP-59i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 09:40

The Boeing Company
ELLE Sample #: WW 1254936
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**5.9**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**26**	**E**	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.4**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**2.8**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	Acetone	67-64-1	50	U	50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	2-Butanone	78-93-3	50	U	50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10

Sample Description: **BOP-59i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 09:40

The Boeing Company
ELLE Sample #: WW 1254936
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	**cis-1,2-Dichloroethene**	156-59-2	**24**		2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	**Vinyl Chloride**	75-01-4	**2.1**		2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in trial 1 of this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	26
1,1,1-trichloroethane	21
carbon tetrachloride	22

The analysis was repeated and the continuing calibration verification standard bracketing the sample on the second trial is also outside the acceptance limits.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23

Sample Description: **BOP-59i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 09:40

The Boeing Company
ELLE Sample #: WW 1254936
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
	carbon tetrachloride	24			

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200431AA	02/12/2020 14:50	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	I200491AA	02/18/2020 12:48	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200431AA	02/12/2020 14:49	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	I200491AA	02/18/2020 12:47	Jennifer K Howe	10

Sample Description: **E-15-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 13:30

The Boeing Company
ELLE Sample #: WW 1254937
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**0.7**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**4.9**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.4**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**3.6**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	26
1,1,1-trichloroethane	21
carbon tetrachloride	22

Sample Description: **E-15-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 13:30

The Boeing Company
ELLE Sample #: WW 1254937
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**7,500 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	250 U	250	50
07105	Ethane	74-84-0	250 U	250	50
07105	Ethene	74-85-1	250 U	250	50
07105	**Methane**	74-82-8	**12,000**	250	50
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
00228	Sulfate	14808-79-8	1.0 U	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**2.5**	1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200431AA	02/12/2020 15:11	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200431AA	02/12/2020 15:10	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200430013A	02/12/2020 14:05	Esther Kathryn Lane	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200430013A	02/13/2020 21:22	Esther Kathryn Lane	50
00368	Nitrate Nitrogen	EPA 300.0	1	20038076115A	02/07/2020 22:33	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20038076115A	02/07/2020 22:33	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20045304502A	02/14/2020 15:46	Bethany Sandone	1

Sample Description: **E-16-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 10:35

The Boeing Company
ELLE Sample #: WW 1254938
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**0.7**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.2**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**1.6**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**1.8**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	26
1,1,1-trichloroethane	21
carbon tetrachloride	22

Sample Description: **E-16-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 10:35

The Boeing Company
ELLE Sample #: WW 1254938
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**9,000 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	250 U	250	50
07105	Ethane	74-84-0	250 U	250	50
07105	Ethene	74-85-1	250 U	250	50
07105	**Methane**	74-82-8	**11,000**	250	50
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
00228	**Sulfate**	14808-79-8	**1.5**	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**6.7**	2.0	2

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200431AA	02/12/2020 15:33	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200431AA	02/12/2020 15:32	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200430013A	02/12/2020 14:24	Esther Kathryn Lane	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200430013A	02/13/2020 21:41	Esther Kathryn Lane	50
00368	Nitrate Nitrogen	EPA 300.0	1	20038076115A	02/07/2020 20:33	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20038076115A	02/07/2020 20:33	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20045304502A	02/15/2020 12:15	Bethany Sandone	2

Sample Description: **E-4-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 12:00

The Boeing Company
ELLE Sample #: WW 1254939
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**4.4**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**2.1**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**1**		0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	**112Trichloro122Trifluoroethane**	76-13-1	**0.7**		0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**26**	**E**	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	Acetone	67-64-1	50	U	50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	2-Butanone	78-93-3	50	U	50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10

Sample Description: **E-4-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 12:00

The Boeing Company
ELLE Sample #: WW 1254939
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	**1,1-Dichloroethene**	75-35-4	**2.7**		2.0	10
11996	cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	**Trichloroethene**	79-01-6	**22**		2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in trial 1 of this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	26
1,1,1-trichloroethane	21
carbon tetrachloride	22

The analysis was repeated and the continuing calibration verification standard bracketing the sample on the second trial is also outside the acceptance limits.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23

Sample Description: **E-4-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 12:00

The Boeing Company
ELLE Sample #: WW 1254939
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name		CAS Number	Result		Limit of Quantitation	Dilution Factor
	carbon tetrachloride	24					
GC Miscellaneous		**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene		74-86-2	5.0	U	5.0	1
07105	Ethane		74-84-0	5.0	U	5.0	1
07105	Ethene		74-85-1	5.0	U	5.0	1
07105	**Methane**		74-82-8	**320**		5.0	1
Wet Chemistry		**EPA 300.0**		**mg/l**		**mg/l**	
00368	**Nitrate Nitrogen**		14797-55-8	**0.43**		0.10	1
00228	**Sulfate**		14808-79-8	**4.3**		1.0	1
		SM 5310 C-2011		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**		n.a.	**1.8**		1.0	1
		EPA 376.1		**mg/l**		**mg/l**	
01333	Sulfide		18496-25-8	2.0	U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200431AA	02/12/2020 15:54	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	I200491AA	02/18/2020 13:09	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200431AA	02/12/2020 15:53	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	I200491AA	02/18/2020 13:08	Jennifer K Howe	10
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200430013A	02/12/2020 15:43	Esther Kathryn Lane	1
00368	Nitrate Nitrogen	EPA 300.0	1	20038076115A	02/07/2020 21:59	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20038076115A	02/07/2020 21:59	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20045304502A	02/14/2020 16:12	Bethany Sandone	1
01333	Sulfide	EPA 376.1	1	20041133301A	02/10/2020 09:59	Nicole Munsell	1

Sample Description: **E-4-0220 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 12:00

The Boeing Company
ELLE Sample #: WW 1254940
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**0.389**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200391404404	02/10/2020 18:30	Elaine F Stoltzfus	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200391404404	02/10/2020 02:58	James L Mertz	1

Sample Description: **E-4-0220 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 12:00

The Boeing Company
ELLE Sample #: WW 1254941
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**0.371**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200391486603	02/10/2020 10:56	Lisa J Cooke	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200391486603	02/10/2020 06:00	James L Mertz	1

Sample Description: **E-3-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 12:50

The Boeing Company
ELLE Sample #: WW 1254942
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**0.8**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.4**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**6.6**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.6**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	26
1,1,1-trichloroethane	21
carbon tetrachloride	22

Sample Description: **E-3-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 12:50

The Boeing Company
ELLE Sample #: WW 1254942
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**12,000 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	500 U	500	100
07105	Ethane	74-84-0	500 U	500	100
07105	Ethene	74-85-1	500 U	500	100
07105	**Methane**	74-82-8	**21,000**	500	100
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
00228	Sulfate	14808-79-8	1.0 U	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**2.8**	1.0	1
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200431AA	02/12/2020 16:15	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200431AA	02/12/2020 16:14	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200430013A	02/12/2020 16:02	Esther Kathryn Lane	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200430013A	02/13/2020 22:17	Esther Kathryn Lane	100
00368	Nitrate Nitrogen	EPA 300.0	1	20038076115A	02/07/2020 22:16	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20038076115A	02/07/2020 22:16	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20045304502A	02/14/2020 16:24	Bethany Sandone	1
01333	Sulfide	EPA 376.1	1	20041133301A	02/10/2020 09:59	Nicole Munsell	1

Sample Description: **E-3-0220 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 12:50

The Boeing Company
ELLE Sample #: WW 1254943
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**8.05**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200391404402	02/11/2020 06:10	Lisa J Cooke	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200391404402	02/10/2020 13:45	JoElla L Rice	1

Sample Description: **E-3-0220 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 12:50

The Boeing Company
ELLE Sample #: WW 1254944
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**7.95**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200391486603	02/10/2020 10:50	Lisa J Cooke	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200391486603	02/10/2020 06:00	James L Mertz	1

Sample Description: **BOP-56i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 14:10

The Boeing Company
ELLE Sample #: WW 1254945
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**45**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	**Chloroform**	67-66-3	**1.2**		0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.2**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**5.4**		0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**12**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	26
1,1,1-trichloroethane	21
carbon tetrachloride	22

Sample Description: **BOP-56i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 14:10

The Boeing Company
ELLE Sample #: WW 1254945
ELLE Group #: 2086723
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200431AA	02/12/2020 16:36	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200431AA	02/12/2020 16:35	Jennifer K Howe	1

Sample Description: **BOP-Y-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 10:00

The Boeing Company
ELLE Sample #: WW 1254946
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**6.0**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**26**	**E**	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.4**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**2.8**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	Acetone	67-64-1	50	U	50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	2-Butanone	78-93-3	50	U	50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10

Sample Description: **BOP-Y-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 10:00

The Boeing Company
ELLE Sample #: WW 1254946
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	**cis-1,2-Dichloroethene**	156-59-2	**24**		2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	**Vinyl Chloride**	75-01-4	**2.3**		2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in trial 1 of this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	26
1,1,1-trichloroethane	21
carbon tetrachloride	22

The analysis was repeated and the continuing calibration verification standard bracketing the sample on the second trial is also outside the acceptance limits.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23

Sample Description: **BOP-Y-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 10:00

The Boeing Company
ELLE Sample #: WW 1254946
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
	carbon tetrachloride	24			

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200431AA	02/12/2020 16:57	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	I200491AA	02/18/2020 13:30	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200431AA	02/12/2020 16:56	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	I200491AA	02/18/2020 13:29	Jennifer K Howe	10

Sample Description: **BOP-57ia-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 10:57

The Boeing Company
ELLE Sample #: WW 1254947
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	**Chloroform**	67-66-3	**0.2**		0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**0.7**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**2.6**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**1.9**		0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**13**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.8**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	26
1,1,1-trichloroethane	21
carbon tetrachloride	22

Sample Description: **BOP-57ia-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020 10:57

The Boeing Company
ELLE Sample #: WW 1254947
ELLE Group #: 2086723
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200431AA	02/12/2020 17:19	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200431AA	02/12/2020 17:18	Jennifer K Howe	1

Sample Description: **Trip Blanks Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020

The Boeing Company
ELLE Sample #: WW 1254948
ELLE Group #: 2086723
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	26
1,1,1-trichloroethane	21
carbon tetrachloride	22

Sample Description: **Trip Blanks Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/07/2020 11:10
Collection Date/Time: 02/06/2020

The Boeing Company
ELLE Sample #: WW 1254948
ELLE Group #: 2086723
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200431AA	02/12/2020 10:56	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200431AA	02/12/2020 10:55	Jennifer K Howe	1

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/19/2020 12:56

Group Number: 2086723

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 was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: I200431AA	Sample number(s): 1254933-1254939,1254942,1254945-1254948		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company Group Number: 2086723
Reported: 02/19/2020 12:56

Method Blank (continued)

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: I200491AA	Sample number(s): 1254935-1254936,1254939,1254946		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5
Batch number: 200430013A	Sample number(s): 1254935,1254937-1254939,1254942		
Acetylene	5.0	U	5.0
Ethane	5.0	U	5.0
Ethene	5.0	U	5.0
Methane	5.0	U	5.0

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/19/2020 12:56

Group Number: 2086723

Method Blank (continued)

Analysis Name	Result	LOQ
	mg/l	mg/l
Batch number: 200391404402	Sample number(s): 1254943	
Iron	0.200 U	0.200
Batch number: 200391404404	Sample number(s): 1254940	
Iron	0.200 U	0.200
Batch number: 200391486603	Sample number(s): 1254941,1254944	
Iron	0.206 U	0.206
Batch number: 20038076115A	Sample number(s): 1254935,1254937-1254939,1254942	
Nitrate Nitrogen	0.10 U	0.10
Sulfate	1.0 U	1.0
Batch number: 20045304502A	Sample number(s): 1254935,1254937-1254939,1254942	
Total Organic Carbon	1.0 U	1.0
Batch number: 20041133301A	Sample number(s): 1254939,1254942	
Sulfide	2.0 U	2.0

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: I200431AA	Sample number(s): 1254933-1254939,1254942,1254945-1254948								
Acetone	37.5	34.43	37.5	33.33	92	89	60-146	3	30
Benzene	5.00	4.91	5.00	4.83	98	97	80-120	2	30
Bromodichloromethane	5.00	5.41	5.00	5.20	108	104	73-124	4	30
Bromoform	5.00	4.93	5.00	4.80	99	96	49-144	3	30
Bromomethane	5.00	4.60	5.00	4.61	92	92	60-136	0	30
2-Butanone	37.5	32.25	37.5	32.31	86	86	59-141	0	30
Carbon Disulfide	5.00	4.01	5.00	3.91	80	78	67-130	3	30
Carbon Tetrachloride	5.00	5.85	5.00	5.78	117	116	64-141	1	30
Chlorobenzene	5.00	4.99	5.00	4.98	100	100	80-120	0	30
Chloroethane	5.00	4.53	5.00	4.49	91	90	63-120	1	30
Chloroform	5.00	5.32	5.00	5.32	106	106	80-120	0	30
Chloromethane	5.00	4.16	5.00	4.18	83	84	56-124	1	30
Dibromochloromethane	5.00	5.10	5.00	5.01	102	100	64-138	2	30
1,1-Dichloroethane	5.00	4.81	5.00	4.76	96	95	74-120	1	30
1,2-Dichloroethane	5.00	5.82	5.00	5.78	116	116	69-122	1	30
1,1-Dichloroethene	5.00	4.85	5.00	4.75	97	95	80-131	2	30
cis-1,2-Dichloroethene	5.00	5.24	5.00	5.15	105	103	80-122	2	30
trans-1,2-Dichloroethene	5.00	4.77	5.00	4.70	95	94	80-122	1	30
1,2-Dichloropropane	5.00	4.79	5.00	4.83	96	97	80-120	1	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/19/2020 12:56

Group Number: 2086723

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
cis-1,3-Dichloropropene	5.00	4.67	5.00	4.66	93	93	67-121	0	30
trans-1,3-Dichloropropene	5.00	4.69	5.00	4.62	94	92	61-129	2	30
Ethylbenzene	5.00	5.08	5.00	5.01	102	100	80-120	1	30
2-Hexanone	25	22.03	25	22.2	88	89	52-140	1	30
4-Methyl-2-pentanone	25	22.56	25	22.29	90	89	55-140	1	30
Methylene Chloride	5.00	4.77	5.00	4.73	95	95	80-120	1	30
Styrene	5.00	5.18	5.00	5.01	104	100	80-120	3	30
1,1,2,2-Tetrachloroethane	5.00	4.70	5.00	4.56	94	91	75-123	3	30
Tetrachloroethene	5.00	5.38	5.00	5.27	108	105	80-120	2	30
Toluene	5.00	5.09	5.00	5.02	102	100	80-120	1	30
112Trichloro122Trifluoroethane	5.00	4.84	5.00	4.85	97	97	75-133	0	30
1,1,1-Trichloroethane	5.00	5.72	5.00	5.64	114	113	78-126	1	30
1,1,2-Trichloroethane	5.00	5.17	5.00	5.07	103	101	80-120	2	30
Trichloroethene	5.00	5.11	5.00	5.03	102	101	80-120	1	30
Trichlorofluoromethane	5.00	6.32	5.00	6.15	126	123	62-136	3	30
Vinyl Acetate	12.5	12.84	12.5	12.65	103	101	38-145	2	30
Vinyl Chloride	5.00	4.45	5.00	4.42	89	88	60-125	1	30
m+p-Xylene	10	10.28	10	10.1	103	101	80-120	2	30
o-Xylene	5.00	5.10	5.00	5.02	102	100	80-120	2	30
Batch number: I200491AA	Sample number(s): 1254935-1254936,1254939,1254946								
Acetone	37.5	34.03	37.5	32.73	91	87	60-146	4	30
Benzene	5.00	5.05	5.00	5.00	101	100	80-120	1	30
Bromodichloromethane	5.00	5.74	5.00	5.70	115	114	73-124	1	30
Bromoform	5.00	5.71	5.00	5.74	114	115	49-144	1	30
Bromomethane	5.00	4.78	5.00	4.72	96	94	60-136	1	30
2-Butanone	37.5	32.67	37.5	32.03	87	85	59-141	2	30
Carbon Disulfide	5.00	4.02	5.00	4.09	80	82	67-130	2	30
Carbon Tetrachloride	5.00	6.21	5.00	6.29	124	126	64-141	1	30
Chlorobenzene	5.00	5.05	5.00	5.21	101	104	80-120	3	30
Chloroethane	5.00	4.48	5.00	4.59	90	92	63-120	3	30
Chloroform	5.00	5.59	5.00	5.66	112	113	80-120	1	30
Chloromethane	5.00	4.18	5.00	4.26	84	85	56-124	2	30
Dibromochloromethane	5.00	5.59	5.00	5.65	112	113	64-138	1	30
1,1-Dichloroethane	5.00	4.83	5.00	4.93	97	99	74-120	2	30
1,2-Dichloroethane	5.00	6.15	5.00	6.20	123*	124*	69-122	1	30
1,1-Dichloroethene	5.00	4.82	5.00	4.89	96	98	80-131	1	30
cis-1,2-Dichloroethene	5.00	5.34	5.00	5.49	107	110	80-122	3	30
trans-1,2-Dichloroethene	5.00	4.90	5.00	5.02	98	100	80-122	2	30
1,2-Dichloropropane	5.00	4.94	5.00	5.00	99	100	80-120	1	30
cis-1,3-Dichloropropene	5.00	4.97	5.00	5.05	99	101	67-121	1	30
trans-1,3-Dichloropropene	5.00	4.79	5.00	5.12	96	102	61-129	7	30
Ethylbenzene	5.00	5.12	5.00	5.27	102	105	80-120	3	30
2-Hexanone	25	22.5	25	21.95	90	88	52-140	2	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/19/2020 12:56

Group Number: 2086723

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
4-Methyl-2-pentanone	25	22.51	25	22.22	90	89	55-140	1	30
Methylene Chloride	5.00	4.95	5.00	5.04	99	101	80-120	2	30
Styrene	5.00	5.16	5.00	5.36	103	107	80-120	4	30
1,1,2,2-Tetrachloroethane	5.00	4.76	5.00	4.82	95	96	75-123	1	30
Tetrachloroethene	5.00	5.42	5.00	5.52	108	110	80-120	2	30
Toluene	5.00	5.17	5.00	5.17	103	103	80-120	0	30
112Trichloro122Trifluoroethane	5.00	4.82	5.00	4.85	96	97	75-133	1	30
1,1,1-Trichloroethane	5.00	5.97	5.00	6.12	119	122	78-126	2	30
1,1,2-Trichloroethane	5.00	5.16	5.00	5.44	103	109	80-120	5	30
Trichloroethene	5.00	5.21	5.00	5.29	104	106	80-120	1	30
Trichlorofluoromethane	5.00	6.33	5.00	6.33	127	127	62-136	0	30
Vinyl Acetate	12.5	13.13	12.5	13.18	105	105	38-145	0	30
Vinyl Chloride	5.00	4.49	5.00	4.54	90	91	60-125	1	30
m+p-Xylene	10	10.48	10	10.7	105	107	80-120	2	30
o-Xylene	5.00	5.11	5.00	5.26	102	105	80-120	3	30
	ug/l	**ug/l**	**ug/l**	**ug/l**					
Batch number: 200430013A	Sample number(s): 1254935,1254937-1254939,1254942								
Acetylene	51.25	52			101		57-146		
Ethane	59.39	61.86			104		85-115		
Ethene	60.4	62.59			104		83-115		
Methane	59.42	63.36			107		85-115		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 200391404402	Sample number(s): 1254943								
Iron	0.400	0.377			94		80-120		
Batch number: 200391404404	Sample number(s): 1254940								
Iron	0.400	0.413			103		80-120		
Batch number: 200391486603	Sample number(s): 1254941,1254944								
Iron	0.400	0.403			101		80-120		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20038076115A	Sample number(s): 1254935,1254937-1254939,1254942								
Nitrate Nitrogen	0.750	0.688			92		90-110		
Sulfate	7.50	7.17			96		90-110		
Batch number: 20045304502A	Sample number(s): 1254935,1254937-1254939,1254942								
Total Organic Carbon	25	24.28			97		91-113		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20041133301A	Sample number(s): 1254939,1254942								
Sulfide	20	18.33			92		80-120		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/19/2020 12:56

Group Number: 2086723

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 20038076115A	Sample number(s): 1254935,1254937-1254939,1254942 UNSPK: 1254938									
Nitrate Nitrogen	0.10 U	1.00	0.992			99		90-110		
Sulfate	1.53	10	11.64			101		90-110		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 20038076115A	Sample number(s): 1254935,1254937-1254939,1254942 BKG: 1254938			
Nitrate Nitrogen	0.10 U	0.158	200* (1)	15
Sulfate	1.53	3.22	71* (1)	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: I200431AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1254933	101	103	95	93
1254934	104	101	93	91
1254935	101	100	95	92
1254936	101	98	95	93
1254937	102	102	95	91
1254938	103	104	94	91
1254939	103	97	94	91
1254942	102	98	94	91
1254945	102	100	95	92
1254946	101	102	94	94
1254947	102	98	95	91
1254948	104	104	94	92
Blank	102	102	94	92

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/19/2020 12:56

Group Number: 2086723

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: I200431AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
LCS	98	99	95	93
LCSD	99	97	95	94
Limits:	80-120	80-120	80-120	80-120

Analysis Name: 8260C Boeing 38
Batch number: I200491AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1254935RE	101	94	93	91
1254936DL	105	94	93	93
1254939DL	104	96	92	92
1254946DL	104	96	93	93
Blank	104	96	93	93
LCS	104	95	93	96
LCSD	101	100	94	95
Limits:	80-120	80-120	80-120	80-120

Analysis Name: AMEE by RSK-175
Batch number: 200430013A

	Propene
1254935	83
1254935DL	94
1254937	67
1254937DL	95
1254938	89
1254938DL	95
1254939	72
1254942	57
1254942DL	91
Blank	102
LCS	103
Limits:	46-135

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 13419 For Eurofins Lancaster Laboratories Environmental use only Group # Case 123 Sample # 254933-48

Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: ~~Boe~~ Gresham, Oregon
Site Project: Boeing of Po-Plank
Site Program/#: ~~Po[illegible]~~ 0025116.120.412
Boeing PM: Debbie Taeye
Consultant Contact: Chris Kimmel
Report To: Above
Invoice To: [x] Boeing EHS [ ] Other (specify):
Sampler: EJN # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	VOC (38 List)	TOC	Nitrate	Sulfate	Sulfide	AMEE	Total Iron	Dissolved Iron					(5) Remarks/Comments
Bop-07A(148)-0220	02/07/20	1420	H2O	3	X												
E-13-0220	02/05/20	1250		3	X	[illegible]											
Dp1-0220	02/06/20	0915		9	X	X		X		X							
Bop-59i-0220	02/06/20	0940		3	X												
E-15-0220	02/06/20	1330		9	X	X	X	X		X							
E-16-0220	02/06/20	1035		9	X	X	X	X		X							
E-4-0220	02/06/20	1200		12	X	X	X	X	X	X	X	X					
E-3-0220	02/06/20	1250		12	X	X	X	X	X	X	X	X					
Bop-56i-0220	02/06/20	1410		3	X												
Bop-Y-0220	02/06/20	1000		3	X												
Bop-57ia-0220	02/06/20	1057		3	X												
Trip Blank	←	—	H2O	2	X												

Page 44 of 47

(6) Turnaround Time Requested (please circle)

(Standard) 5 day 4 day
72 hour 48 hour 24 hour
Date needed: _____

Relinquished by: Joey Nguyen	Date/Time 02/06 1640	Received by:	Date/Time (7)
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time 2/7/20 1110
Relinquished by commercial carrier (circle): UPS FedEx ✓ Other:		Temperature upon Receipt: 0.4 °C Custody Seals Intact?: Yes No	

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.

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 274918

Group Number(s): 2086723

Client: Boeing

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Date:	02/07/2020
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	2
Samples Chilled:	Yes	Trip Blank Type:	HCl
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Tamara Lugardo

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-03	0.4	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

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

Tests 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.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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. 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. 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.

eurofins | Lancaster Laboratories Environmental

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 9U4-26
Seattle WA 98124-2207

Report Date: February 20, 2020 14:17

Project: Boeing of Portland/025116.120.412

Account #: 13419
Group Number: 2086955
PO Number: 025116.120.412
State of Sample Origin: OR

Electronic Copy To	Landau	Attn: Chris Kimmel
Electronic Copy To	Landau Associates	Attn: Dani Jorgensen
Electronic Copy To	Landau	Attn: Erin Waibel
Electronic Copy To	Landau Associates	Attn: Laura Lafferty

Respectfully Submitted,

Kay Hower

(717) 556-7364

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
BOP-16i-0220 Water	02/07/2020 09:41	1255976
BOP-16i-0220 Total Metals Water	02/07/2020 09:41	1255977
BOP-16i-0220 Dissolved Metals Water	02/07/2020 09:41	1255978
BOP-78i-0220 Water	02/07/2020 13:50	1255979
BOP-79i-0220 Water	02/07/2020 13:20	1255980
BOP-84i-0220 Water	02/07/2020 14:20	1255981
BOP-85i-0220 Water	02/07/2020 14:00	1255982
BOP-86i-0220 Water	02/07/2020 12:50	1255983
Trip Blanks Water	02/07/2020	1255984

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Project Name: Boeing of Portland/025116.120.412
ELLE Group #: 2086955

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

SW-846 8260C 25mL purge, GC/MS Volatiles

Sample #s: 1255982, 1255983

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

Sample #s: 1255976, 1255979, 1255980, 1255984

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

Sample #s: 1255981

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in trial 1 of this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

The analysis was repeated and the continuing calibration

verification standard bracketing the sample on the second trial is within specification.

Batch #: I200491AA (Sample number(s): 1255976, 1255979-1255981, 1255984)

The recovery(ies) for the following analyte(s) in the LCS and/or LCSD exceeded the acceptance window indicating a positive bias: 1,2-Dichloroethane

Sample Description: **BOP-16i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 09:41

The Boeing Company
ELLE Sample #: WW 1255976
ELLE Group #: 2086955
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.8**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.3**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**1.1**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

Sample Description: **BOP-16i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 09:41

The Boeing Company
ELLE Sample #: WW 1255976
ELLE Group #: 2086955
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**2,100 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	50 U	50	10
07105	Ethane	74-84-0	50 U	50	10
07105	Ethene	74-85-1	50 U	50	10
07105	**Methane**	74-82-8	**3,600**	50	10
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
00228	**Sulfate**	14808-79-8	**2.2**	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**2.4**	1.0	1
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200491AA	02/18/2020 13:51	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200491AA	02/18/2020 13:50	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200420002A	02/11/2020 18:42	Esther Kathryn Lane	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200420002A	02/12/2020 19:59	Esther Kathryn Lane	10
00368	Nitrate Nitrogen	EPA 300.0	1	20039720213A	02/08/2020 17:51	Samantha Faverio	1
00228	Sulfate	EPA 300.0	1	20039720213A	02/08/2020 17:51	Samantha Faverio	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20046304501A	02/15/2020 17:36	Bethany Sandone	1
01333	Sulfide	EPA 376.1	1	20042133301A	02/11/2020 08:00	Nicole Munsell	1

Sample Description: **BOP-16i-0220 Total Metals Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 09:41

The Boeing Company
ELLE Sample #: WW 1255977
ELLE Group #: 2086955
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**4.72**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200421404401	02/11/2020 14:30	Patrick J Engle	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200421404401	02/11/2020 03:39	James L Mertz	1

Sample Description: **BOP-16i-0220 Dissolved Metals Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 09:41

The Boeing Company
ELLE Sample #: WW 1255978
ELLE Group #: 2086955
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**4.37**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200421486603	02/12/2020 11:38	Lisa J Cooke	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200421486603	02/12/2020 06:00	James L Mertz	1

Sample Description: **BOP-78i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 13:50

The Boeing Company
ELLE Sample #: WW 1255979
ELLE Group #: 2086955
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	**Acetone**	67-64-1	**39**	5.0	1
11996	**Benzene**	71-43-2	**0.5**	0.2	1
11996	Bromodichloromethane	75-27-4	0.5 U	0.5	1
11996	Bromoform	75-25-2	0.5 U	0.5	1
11996	Bromomethane	74-83-9	0.5 U	0.5	1
11996	**2-Butanone**	78-93-3	**150**	5.0	1
11996	Carbon Disulfide	75-15-0	0.5 U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2 U	0.2	1
11996	Chlorobenzene	108-90-7	0.5 U	0.5	1
11996	Chloroethane	75-00-3	0.5 U	0.5	1
11996	**Chloroform**	67-66-3	**0.7**	0.2	1
11996	Chloromethane	74-87-3	0.5 U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5 U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5 U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2 U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2 U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**4.0**	0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**0.7**	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5 U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2 U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2 U	0.2	1
11996	Ethylbenzene	100-41-4	0.5 U	0.5	1
11996	**2-Hexanone**	591-78-6	**12**	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0 U	5.0	1
11996	Methylene Chloride	75-09-2	0.5 U	0.5	1
11996	Styrene	100-42-5	0.5 U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2 U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2 U	0.2	1
11996	**Toluene**	108-88-3	**0.4**	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5 U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5 U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2 U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.4**	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5 U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5 U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**11**	0.2	1
11996	m+p-Xylene	179601-23-1	0.5 U	0.5	1
11996	o-Xylene	95-47-6	0.5 U	0.5	1

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

Sample Description: **BOP-78i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 13:50

The Boeing Company
ELLE Sample #: WW 1255979
ELLE Group #: 2086955
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200491AA	02/18/2020 14:13	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200491AA	02/18/2020 14:12	Jennifer K Howe	1

Sample Description: **BOP-79i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 13:20

The Boeing Company
ELLE Sample #: WW 1255980
ELLE Group #: 2086955
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**41**		5.0	1
11996	**Benzene**	71-43-2	**0.5**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**12**		5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.7**		0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**0.3**		0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**5.0**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.2**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.3**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

Sample Description: **BOP-79i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 13:20

The Boeing Company
ELLE Sample #: WW 1255980
ELLE Group #: 2086955
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200491AA	02/18/2020 14:34	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200491AA	02/18/2020 14:33	Jennifer K Howe	1

Sample Description: **BOP-84i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 14:20

The Boeing Company
ELLE Sample #: WW 1255981
ELLE Group #: 2086955
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**160**		5.0	1
11996	**Benzene**	71-43-2	**3.5**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**260**	**E**	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	**Chloroform**	67-66-3	**2.2**		0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.6**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	**4-Methyl-2-pentanone**	108-10-1	**12**		5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.5**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.9**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	**Acetone**	67-64-1	**210**		50	10
11996	**Benzene**	71-43-2	**3.3**		2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**330**		50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10

Sample Description: **BOP-84i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 14:20

The Boeing Company
ELLE Sample #: WW 1255981
ELLE Group #: 2086955
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	**Chloroform**	67-66-3	**2.2**		2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in trial 1 of this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

The analysis was repeated and the continuing calibration verification standard bracketing the sample on the second trial is within specification.

Sample Description: **BOP-84i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 14:20

The Boeing Company
ELLE Sample #: WW 1255981
ELLE Group #: 2086955
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200491AA	02/18/2020 14:55	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	I200501AA	02/19/2020 12:05	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200491AA	02/18/2020 14:54	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	I200501AA	02/19/2020 12:04	Jennifer K Howe	10

Sample Description: **BOP-85i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 14:00

The Boeing Company
ELLE Sample #: WW 1255982
ELLE Group #: 2086955
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	**Benzene**	71-43-2	**2.2**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**820**	**E**	5.0	1
11996	**Carbon Disulfide**	75-15-0	**0.6**		0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	**Chloroform**	67-66-3	**4.5**		0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.9**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	**Methylene Chloride**	75-09-2	**0.9**		0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.6**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.3**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.9**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	Acetone	67-64-1	50	U	50	10
11996	**Benzene**	71-43-2	**2.3**		2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**1,000**		50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10

Sample Description: **BOP-85i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 14:00

The Boeing Company
ELLE Sample #: WW 1255982
ELLE Group #: 2086955
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	**Chloroform**	67-66-3	**4.9**		2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200501AA	02/19/2020 17:46	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	I200501AA	02/19/2020 18:07	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200501AA	02/19/2020 17:45	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	I200501AA	02/19/2020 18:06	Jennifer K Howe	10

Sample Description: **BOP-86i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 12:50

The Boeing Company
ELLE Sample #: WW 1255983
ELLE Group #: 2086955
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**330**	**E**	5.0	1
11996	**Benzene**	71-43-2	**2.1**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**850**	**E**	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	**Chloroform**	67-66-3	**2.5**		0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.5**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	**2-Hexanone**	591-78-6	**39**		5.0	1
11996	**4-Methyl-2-pentanone**	108-10-1	**6.1**		5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.3**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.7**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.4**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	**Acetone**	67-64-1	**430**		50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**1,100**		50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10

Sample Description: **BOP-86i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 12:50

The Boeing Company
ELLE Sample #: WW 1255983
ELLE Group #: 2086955
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	**Chloroform**	67-66-3	**2.4**		2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	**2-Hexanone**	591-78-6	**59**		50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200501AA	02/19/2020 18:28	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	I200501AA	02/19/2020 18:50	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200501AA	02/19/2020 18:27	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	I200501AA	02/19/2020 18:49	Jennifer K Howe	10

Sample Description: **Trip Blanks Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020

The Boeing Company
ELLE Sample #: WW 1255984
ELLE Group #: 2086955
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

Sample Description: **Trip Blanks Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020

The Boeing Company
ELLE Sample #: WW 1255984
ELLE Group #: 2086955
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200491AA	02/18/2020 11:22	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200491AA	02/18/2020 11:21	Jennifer K Howe	1

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 14:17

Group Number: 2086955

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 was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: I200491AA	Sample number(s): 1255976,1255979-1255981,1255984		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 14:17

Group Number: 2086955

Method Blank (continued)

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: I200501AA	Sample number(s): 1255981-1255983		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5
Batch number: 200420002A	Sample number(s): 1255976		
Acetylene	5.0	U	5.0
Ethane	5.0	U	5.0
Ethene	5.0	U	5.0
Methane	5.0	U	5.0

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 14:17

Group Number: 2086955

Method Blank (continued)

Analysis Name	Result	LOQ
	mg/l	mg/l
Batch number: 200421404401	Sample number(s): 1255977	
Iron	0.200 U	0.200
Batch number: 200421486603	Sample number(s): 1255978	
Iron	0.206 U	0.206
Batch number: 20039720213A	Sample number(s): 1255976	
Nitrate Nitrogen	0.10 U	0.10
Sulfate	1.0 U	1.0
Batch number: 20046304501A	Sample number(s): 1255976	
Total Organic Carbon	1.0 U	1.0
Batch number: 20042133301A	Sample number(s): 1255976	
Sulfide	2.0 U	2.0

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: I200491AA	Sample number(s): 1255976,1255979-1255981,1255984								
Acetone	37.5	34.03	37.5	32.73	91	87	60-146	4	30
Benzene	5.00	5.05	5.00	5.00	101	100	80-120	1	30
Bromodichloromethane	5.00	5.74	5.00	5.70	115	114	73-124	1	30
Bromoform	5.00	5.71	5.00	5.74	114	115	49-144	1	30
Bromomethane	5.00	4.78	5.00	4.72	96	94	60-136	1	30
2-Butanone	37.5	32.67	37.5	32.03	87	85	59-141	2	30
Carbon Disulfide	5.00	4.02	5.00	4.09	80	82	67-130	2	30
Carbon Tetrachloride	5.00	6.21	5.00	6.29	124	126	64-141	1	30
Chlorobenzene	5.00	5.05	5.00	5.21	101	104	80-120	3	30
Chloroethane	5.00	4.48	5.00	4.59	90	92	63-120	3	30
Chloroform	5.00	5.59	5.00	5.66	112	113	80-120	1	30
Chloromethane	5.00	4.18	5.00	4.26	84	85	56-124	2	30
Dibromochloromethane	5.00	5.59	5.00	5.65	112	113	64-138	1	30
1,1-Dichloroethane	5.00	4.83	5.00	4.93	97	99	74-120	2	30
1,2-Dichloroethane	5.00	6.15	5.00	6.20	123*	124*	69-122	1	30
1,1-Dichloroethene	5.00	4.82	5.00	4.89	96	98	80-131	1	30
cis-1,2-Dichloroethene	5.00	5.34	5.00	5.49	107	110	80-122	3	30
trans-1,2-Dichloroethene	5.00	4.90	5.00	5.02	98	100	80-122	2	30
1,2-Dichloropropane	5.00	4.94	5.00	5.00	99	100	80-120	1	30
cis-1,3-Dichloropropene	5.00	4.97	5.00	5.05	99	101	67-121	1	30
trans-1,3-Dichloropropene	5.00	4.79	5.00	5.12	96	102	61-129	7	30
Ethylbenzene	5.00	5.12	5.00	5.27	102	105	80-120	3	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 14:17

Group Number: 2086955

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
2-Hexanone	25	22.5	25	21.95	90	88	52-140	2	30
4-Methyl-2-pentanone	25	22.51	25	22.22	90	89	55-140	1	30
Methylene Chloride	5.00	4.95	5.00	5.04	99	101	80-120	2	30
Styrene	5.00	5.16	5.00	5.36	103	107	80-120	4	30
1,1,2,2-Tetrachloroethane	5.00	4.76	5.00	4.82	95	96	75-123	1	30
Tetrachloroethene	5.00	5.42	5.00	5.52	108	110	80-120	2	30
Toluene	5.00	5.17	5.00	5.17	103	103	80-120	0	30
112Trichloro122Trifluoroethane	5.00	4.82	5.00	4.85	96	97	75-133	1	30
1,1,1-Trichloroethane	5.00	5.97	5.00	6.12	119	122	78-126	2	30
1,1,2-Trichloroethane	5.00	5.16	5.00	5.44	103	109	80-120	5	30
Trichloroethene	5.00	5.21	5.00	5.29	104	106	80-120	1	30
Trichlorofluoromethane	5.00	6.33	5.00	6.33	127	127	62-136	0	30
Vinyl Acetate	12.5	13.13	12.5	13.18	105	105	38-145	0	30
Vinyl Chloride	5.00	4.49	5.00	4.54	90	91	60-125	1	30
m+p-Xylene	10	10.48	10	10.7	105	107	80-120	2	30
o-Xylene	5.00	5.11	5.00	5.26	102	105	80-120	3	30
Batch number: I200501AA	Sample number(s): 1255981-1255983								
Acetone	37.5	36.49	37.5	36.04	97	96	60-146	1	30
Benzene	5.00	4.83	5.00	4.90	97	98	80-120	1	30
Bromodichloromethane	5.00	5.52	5.00	5.41	110	108	73-124	2	30
Bromoform	5.00	5.38	5.00	5.36	108	107	49-144	0	30
Bromomethane	5.00	4.58	5.00	4.55	92	91	60-136	1	30
2-Butanone	37.5	35.63	37.5	34.78	95	93	59-141	2	30
Carbon Disulfide	5.00	3.94	5.00	3.88	79	78	67-130	2	30
Carbon Tetrachloride	5.00	5.66	5.00	5.52	113	110	64-141	3	30
Chlorobenzene	5.00	4.99	5.00	4.95	100	99	80-120	1	30
Chloroethane	5.00	4.57	5.00	4.70	91	94	63-120	3	30
Chloroform	5.00	5.34	5.00	5.34	107	107	80-120	0	30
Chloromethane	5.00	4.34	5.00	4.30	87	86	56-124	1	30
Dibromochloromethane	5.00	5.36	5.00	5.36	107	107	64-138	0	30
1,1-Dichloroethane	5.00	4.82	5.00	4.78	96	96	74-120	1	30
1,2-Dichloroethane	5.00	5.71	5.00	5.57	114	111	69-122	2	30
1,1-Dichloroethene	5.00	4.84	5.00	4.63	97	93	80-131	4	30
cis-1,2-Dichloroethene	5.00	5.23	5.00	5.07	105	101	80-122	3	30
trans-1,2-Dichloroethene	5.00	4.73	5.00	4.70	95	94	80-122	1	30
1,2-Dichloropropane	5.00	4.94	5.00	4.96	99	99	80-120	0	30
cis-1,3-Dichloropropene	5.00	4.87	5.00	4.80	97	96	67-121	1	30
trans-1,3-Dichloropropene	5.00	4.88	5.00	4.80	98	96	61-129	2	30
Ethylbenzene	5.00	5.12	5.00	5.05	102	101	80-120	1	30
2-Hexanone	25	25.13	25	24.65	101	99	52-140	2	30
4-Methyl-2-pentanone	25	25.56	25	24.45	102	98	55-140	4	30
Methylene Chloride	5.00	4.75	5.00	4.67	95	93	80-120	2	30
Styrene	5.00	5.20	5.00	5.15	104	103	80-120	1	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 14:17

Group Number: 2086955

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1,2,2-Tetrachloroethane	5.00	4.79	5.00	4.82	96	96	75-123	1	30
Tetrachloroethene	5.00	5.26	5.00	5.30	105	106	80-120	1	30
Toluene	5.00	5.00	5.00	5.11	100	102	80-120	2	30
112Trichloro122Trifluoroethane	5.00	4.54	5.00	4.45	91	89	75-133	2	30
1,1,1-Trichloroethane	5.00	5.57	5.00	5.50	111	110	78-126	1	30
1,1,2-Trichloroethane	5.00	5.30	5.00	5.22	106	104	80-120	1	30
Trichloroethene	5.00	5.01	5.00	4.99	100	100	80-120	0	30
Trichlorofluoromethane	5.00	5.91	5.00	5.78	118	116	62-136	2	30
Vinyl Acetate	12.5	13.6	12.5	13.52	109	108	38-145	1	30
Vinyl Chloride	5.00	4.42	5.00	4.35	88	87	60-125	2	30
m+p-Xylene	10	10.29	10	10.13	103	101	80-120	2	30
o-Xylene	5.00	5.03	5.00	4.95	101	99	80-120	2	30
	ug/l	**ug/l**	**ug/l**	**ug/l**					
Batch number: 200420002A	Sample number(s): 1255976								
Acetylene	51.25	50.17			98		57-146		
Ethane	59.39	58.46			98		85-115		
Ethene	60.4	59.48			98		83-115		
Methane	59.42	62.15			105		85-115		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 200421404401	Sample number(s): 1255977								
Iron	0.400	0.418			104		80-120		
Batch number: 200421486603	Sample number(s): 1255978								
Iron	0.400	0.397			99		80-120		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20039720213A	Sample number(s): 1255976								
Nitrate Nitrogen	0.750	0.716			95		90-110		
Sulfate	7.50	7.23			96		90-110		
Batch number: 20046304501A	Sample number(s): 1255976								
Total Organic Carbon	25	25.18			101		91-113		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20042133301A	Sample number(s): 1255976								
Sulfide	20	18.53	20	18.53	93	93	80-120	0	5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 14:17

Group Number: 2086955

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 20039720213A	Sample number(s): 1255976 UNSPK: 1255976									
Nitrate Nitrogen	0.10 U	1.00	0.939			94		90-110		
Sulfate	2.24	10	11.92			97		90-110		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 20039720213A	Sample number(s): 1255976 BKG: 1255976			
Nitrate Nitrogen	0.10 U	0.10 U	0 (1)	15
Sulfate	2.24	2.21	1 (1)	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: I200491AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1255976	105	106	93	94
1255979	101	95	92	94
1255980	104	104	94	95
1255981	99	96	89	95
1255984	105	98	93	91
Blank	104	96	93	93
LCS	104	95	93	96
LCSD	101	100	94	95
Limits:	80-120	80-120	80-120	80-120

Analysis Name: 8260C Boeing 38
Batch number: I200501AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1255981DL	100	97	96	95

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 14:17

Group Number: 2086955

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: I200501AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1255982	96	99	95	94
1255982DL	98	96	96	95
1255983	96	96	96	94
1255983DL	97	98	99	97
Blank	100	102	95	92
LCS	98	103	95	94
LCSD	99	95	96	94
Limits:	80-120	80-120	80-120	80-120

Analysis Name: AMEE by RSK-175
Batch number: 200420002A

	Propene
1255976	55
1255976DL	91
Blank	100
LCS	102
Limits:	46-135

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 13419 For Eurofins Lancaster Laboratories Environmental use only Group # 1286955 Sample # 125976-84

Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Gresham, Oregon
Site Project: Boeing of Portland
Site Program/#: 02116.120.412
Boeing PM: Debbie Taege
Consultant Contact: Chris Kimmel
Report To: Above
Invoice To: [X] Boeing EHS [ ] Other (specify):
Sampler: GJN/LHL # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: VOC (38 List)	TOC	Sulfate	AMEE by RSK-175	Nitrate	Sulfide	Total Iron	Dissolved Iron					(5) Remarks/Comments
BOP-16;-0220	02/07/20	0941	H2O	17	X	X	X	X	X	X	X	X					
BOP-78;-0220	02/07/20	1350		3	X												
BOP-79;-0220	02/07/20	1320		3	X												
BOP-84;-0220	02/07/20	1420		3	X												
BOP-85;-0220	02/07/20	1400		3	X												
BOP-86;-0220	02/07/20	1270		3	X												
TRIP Blanks	—	—		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
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time 2-8-20 0941
Relinquished by commercial carrier (circle): UPS FedEx Other:		Temperature upon Receipt: 1.3 °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.

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 275064

Group Number(s): ~~2186~~ 2086955

Client: BOEING

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Date:	02/08/2020
Number of Packages:	1	Number of Projects:	2

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	2
Samples Chilled:	Yes	Trip Blank Type:	HCl
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Julissa Rivera-Santa

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	46730060WS	1.3	IR	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

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

Tests 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.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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. 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. 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.

eurofins | Lancaster Laboratories Environmental

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 9U4-26
Seattle WA 98124-2207

Report Date: February 20, 2020 10:57

Project: Boeing of Portland/0025116.120.412

Account #: 13419
Group Number: 2086956
PO Number: 0025116.120.412
State of Sample Origin: OR

Electronic Copy To	Landau	Attn: Chris Kimmel
Electronic Copy To	Landau Associates	Attn: Dani Jorgensen
Electronic Copy To	Landau	Attn: Erin Waibel
Electronic Copy To	Landau Associates	Attn: Laura Lafferty

Respectfully Submitted,

Kay Hower

(717) 556-7364

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
LAI-7-0220 Water	02/07/2020 11:15	1255985
LAI-8-0220 Water	02/07/2020 10:47	1255986
Trip Blanks Water	02/07/2020	1255987

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Project Name: Boeing of Portland/0025116.120.412
ELLE Group #: 2086956

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

SW-846 8260C 25mL purge, GC/MS Volatiles

Sample #s: 1255987

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

Batch #: I200491AA (Sample number(s): 1255987)

The recovery(ies) for the following analyte(s) in the LCS and/or LCSD exceeded the acceptance window indicating a positive bias: 1,2-Dichloroethane

ECY 97-602 NWTPH-Dx modified, GC Petroleum Hydrocarbons w/Si

Sample #s: 1255986

The sample pattern does not match our reference standard for #2fuel/diesel.

The sample pattern is most similar to our reference standard for Motor oil composite.

Batch #: 200430025A (Sample number(s): 1255985-1255986)

The recovery(ies) for one or more surrogates exceeded the acceptance window indicating a positive bias for sample(s) 1255986

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Sample Description: **LAI-7-0220 Water**
Boeing of Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 11:15

The Boeing Company
ELLE Sample #: WW 1255985
ELLE Group #: 2086956
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Acetone	67-64-1	5.0 U	5.0	1
11996	Benzene	71-43-2	0.2 U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5 U	0.5	1
11996	Bromoform	75-25-2	0.5 U	0.5	1
11996	Bromomethane	74-83-9	0.5 U	0.5	1
11996	2-Butanone	78-93-3	5.0 U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5 U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2 U	0.2	1
11996	Chlorobenzene	108-90-7	0.5 U	0.5	1
11996	Chloroethane	75-00-3	0.5 U	0.5	1
11996	Chloroform	67-66-3	0.2 U	0.2	1
11996	Chloromethane	74-87-3	0.5 U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5 U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5 U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2 U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2 U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**11**	0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**0.3**	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5 U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2 U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2 U	0.2	1
11996	Ethylbenzene	100-41-4	0.5 U	0.5	1
11996	2-Hexanone	591-78-6	5.0 U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0 U	5.0	1
11996	Methylene Chloride	75-09-2	0.5 U	0.5	1
11996	Styrene	100-42-5	0.5 U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2 U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**2.6**	0.2	1
11996	Toluene	108-88-3	0.2 U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5 U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5 U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2 U	0.2	1
11996	**Trichloroethene**	79-01-6	**7.4**	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5 U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5 U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2 U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5 U	0.5	1
11996	o-Xylene	95-47-6	0.5 U	0.5	1
GC Petroleum Hydrocarbons w/Si	**ECY 97-602 NWTPH-Dx modified**		**mg/l**	**mg/l**	
12094	Diesel/#2 Fuel w/Si Gel	68334-30-5	0.11 U	0.11	1
12094	DRO C12-C24 w/Si Gel	n.a.	0.11 U	0.11	1
12094	Motor Oil w/Si Gel	n.a.	0.27 U	0.27	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**2.7**	0.10	1

Sample Description: **LAI-7-0220 Water**
Boeing of Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 11:15

The Boeing Company
ELLE Sample #: WW 1255985
ELLE Group #: 2086956
Matrix: Water

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation	Dilution Factor
Wet Chemistry		**EPA 300.0**		**mg/l**	**mg/l**	
00228	**Sulfate**		14808-79-8	**10.9**	1.0	1
		EPA 1664A		**mg/l**	**mg/l**	
08079	HEM (oil & grease)		n.a.	5.0 U	5.0	1
08078	SGT-HEM (TPH)		n.a.	5.0 U	5.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200501AA	02/19/2020 19:54	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200501AA	02/19/2020 19:53	Jennifer K Howe	1
12094	NWTPH-Dx Water w/ Silica Gel	ECY 97-602 NWTPH-Dx modified	1	200430025A	02/15/2020 17:11	Heather E Williams	1
12120	TPH-Dx w/Fuel Water Ext. (SG)	ECY 97-602 NWTPH-Dx 06/97	1	200430025A	02/13/2020 11:37	Christine E Gleim	1
00368	Nitrate Nitrogen	EPA 300.0	1	20039720213A	02/08/2020 18:51	Samantha Faverio	1
00228	Sulfate	EPA 300.0	1	20039720213A	02/08/2020 18:51	Samantha Faverio	1
08079	HEM (oil & grease)	EPA 1664A	1	20044807901A	02/13/2020 08:22	Yolunder Y Bunch	1
08078	SGT-HEM (TPH)	EPA 1664A	1	20044807801A	02/13/2020 08:24	Yolunder Y Bunch	1

Sample Description: **LAI-8-0220 Water**
Boeing of Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020 10:47

The Boeing Company
ELLE Sample #: WW 1255986
ELLE Group #: 2086956
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Petroleum Hydrocarbons w/Si	**ECY 97-602 NWTPH-Dx modified**		**mg/l**	**mg/l**	
12094	**Diesel/#2 Fuel w/Si Gel**	68334-30-5	**280**	20	200
12094	**DRO C12-C24 w/Si Gel**	n.a.	**230**	20	200
12094	**Motor Oil w/Si Gel**	n.a.	**460**	50	200
	The sample pattern does not match our reference standard for #2fuel/diesel.				
	The sample pattern is most similar to our reference standard for Motor oil composite.				
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
00228	Sulfate	14808-79-8	1.0 U	1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12094	NWTPH-Dx Water w/ Silica Gel	ECY 97-602 NWTPH-Dx modified	1	200430025A	02/18/2020 17:40	Heather E Williams	200
12120	TPH-Dx w/Fuel Water Ext. (SG)	ECY 97-602 NWTPH-Dx 06/97	1	200430025A	02/13/2020 11:37	Christine E Gleim	1
00368	Nitrate Nitrogen	EPA 300.0	1	20039720213A	02/08/2020 18:36	Samantha Faverio	1
00228	Sulfate	EPA 300.0	1	20039720213A	02/08/2020 18:36	Samantha Faverio	1

Sample Description: **Trip Blanks Water**
Boeing of Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020

The Boeing Company
ELLE Sample #: WW 1255987
ELLE Group #: 2086956
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Acetone	67-64-1	5.0 U	5.0	1
11996	Benzene	71-43-2	0.2 U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5 U	0.5	1
11996	Bromoform	75-25-2	0.5 U	0.5	1
11996	Bromomethane	74-83-9	0.5 U	0.5	1
11996	2-Butanone	78-93-3	5.0 U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5 U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2 U	0.2	1
11996	Chlorobenzene	108-90-7	0.5 U	0.5	1
11996	Chloroethane	75-00-3	0.5 U	0.5	1
11996	Chloroform	67-66-3	0.2 U	0.2	1
11996	Chloromethane	74-87-3	0.5 U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5 U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5 U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2 U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2 U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2 U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2 U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5 U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2 U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2 U	0.2	1
11996	Ethylbenzene	100-41-4	0.5 U	0.5	1
11996	2-Hexanone	591-78-6	5.0 U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0 U	5.0	1
11996	Methylene Chloride	75-09-2	0.5 U	0.5	1
11996	Styrene	100-42-5	0.5 U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2 U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2 U	0.2	1
11996	Toluene	108-88-3	0.2 U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5 U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5 U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2 U	0.2	1
11996	Trichloroethene	79-01-6	0.2 U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5 U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5 U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2 U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5 U	0.5	1
11996	o-Xylene	95-47-6	0.5 U	0.5	1

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

Sample Description: **Trip Blanks Water**
Boeing of Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/08/2020 09:41
Collection Date/Time: 02/07/2020

The Boeing Company
ELLE Sample #: WW 1255987
ELLE Group #: 2086956
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200491AA	02/18/2020 12:06	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200491AA	02/18/2020 12:05	Jennifer K Howe	1

Quality Control Summary

Client Name: The Boeing Company Group Number: 2086956
Reported: 02/20/2020 10:57

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 was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: I200491AA	Sample number(s): 1255987		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 10:57

Group Number: 2086956

Method Blank (continued)

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: I200501AA	Sample number(s): 1255985		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5
	mg/l		mg/l
Batch number: 200430025A	Sample number(s): 1255985-1255986		
Diesel/#2 Fuel w/Si Gel	0.10	U	0.10
DRO C12-C24 w/Si Gel	0.10	U	0.10
Motor Oil w/Si Gel	0.25	U	0.25

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 10:57

Group Number: 2086956

Method Blank (continued)

Analysis Name	Result mg/l	LOQ mg/l
Batch number: 20039720213A	Sample number(s): 1255985-1255986	
Nitrate Nitrogen	0.10 U	0.10
Sulfate	1.0 U	1.0
Batch number: 20044807801A	Sample number(s): 1255985	
SGT-HEM (TPH)	5.0 U	5.0
Batch number: 20044807901A	Sample number(s): 1255985	
HEM (oil & grease)	5.0 U	5.0

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: I200491AA	Sample number(s): 1255987								
Acetone	37.5	34.03	37.5	32.73	91	87	60-146	4	30
Benzene	5.00	5.05	5.00	5.00	101	100	80-120	1	30
Bromodichloromethane	5.00	5.74	5.00	5.70	115	114	73-124	1	30
Bromoform	5.00	5.71	5.00	5.74	114	115	49-144	1	30
Bromomethane	5.00	4.78	5.00	4.72	96	94	60-136	1	30
2-Butanone	37.5	32.67	37.5	32.03	87	85	59-141	2	30
Carbon Disulfide	5.00	4.02	5.00	4.09	80	82	67-130	2	30
Carbon Tetrachloride	5.00	6.21	5.00	6.29	124	126	64-141	1	30
Chlorobenzene	5.00	5.05	5.00	5.21	101	104	80-120	3	30
Chloroethane	5.00	4.48	5.00	4.59	90	92	63-120	3	30
Chloroform	5.00	5.59	5.00	5.66	112	113	80-120	1	30
Chloromethane	5.00	4.18	5.00	4.26	84	85	56-124	2	30
Dibromochloromethane	5.00	5.59	5.00	5.65	112	113	64-138	1	30
1,1-Dichloroethane	5.00	4.83	5.00	4.93	97	99	74-120	2	30
1,2-Dichloroethane	5.00	6.15	5.00	6.20	123*	124*	69-122	1	30
1,1-Dichloroethene	5.00	4.82	5.00	4.89	96	98	80-131	1	30
cis-1,2-Dichloroethene	5.00	5.34	5.00	5.49	107	110	80-122	3	30
trans-1,2-Dichloroethene	5.00	4.90	5.00	5.02	98	100	80-122	2	30
1,2-Dichloropropane	5.00	4.94	5.00	5.00	99	100	80-120	1	30
cis-1,3-Dichloropropene	5.00	4.97	5.00	5.05	99	101	67-121	1	30
trans-1,3-Dichloropropene	5.00	4.79	5.00	5.12	96	102	61-129	7	30
Ethylbenzene	5.00	5.12	5.00	5.27	102	105	80-120	3	30
2-Hexanone	25	22.5	25	21.95	90	88	52-140	2	30
4-Methyl-2-pentanone	25	22.51	25	22.22	90	89	55-140	1	30
Methylene Chloride	5.00	4.95	5.00	5.04	99	101	80-120	2	30
Styrene	5.00	5.16	5.00	5.36	103	107	80-120	4	30
1,1,2,2-Tetrachloroethane	5.00	4.76	5.00	4.82	95	96	75-123	1	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 10:57

Group Number: 2086956

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Tetrachloroethene	5.00	5.42	5.00	5.52	108	110	80-120	2	30
Toluene	5.00	5.17	5.00	5.17	103	103	80-120	0	30
112Trichloro122Trifluoroethane	5.00	4.82	5.00	4.85	96	97	75-133	1	30
1,1,1-Trichloroethane	5.00	5.97	5.00	6.12	119	122	78-126	2	30
1,1,2-Trichloroethane	5.00	5.16	5.00	5.44	103	109	80-120	5	30
Trichloroethene	5.00	5.21	5.00	5.29	104	106	80-120	1	30
Trichlorofluoromethane	5.00	6.33	5.00	6.33	127	127	62-136	0	30
Vinyl Acetate	12.5	13.13	12.5	13.18	105	105	38-145	0	30
Vinyl Chloride	5.00	4.49	5.00	4.54	90	91	60-125	1	30
m+p-Xylene	10	10.48	10	10.7	105	107	80-120	2	30
o-Xylene	5.00	5.11	5.00	5.26	102	105	80-120	3	30
Batch number: I200501AA	Sample number(s): 1255985								
Acetone	37.5	36.49	37.5	36.04	97	96	60-146	1	30
Benzene	5.00	4.83	5.00	4.90	97	98	80-120	1	30
Bromodichloromethane	5.00	5.52	5.00	5.41	110	108	73-124	2	30
Bromoform	5.00	5.38	5.00	5.36	108	107	49-144	0	30
Bromomethane	5.00	4.58	5.00	4.55	92	91	60-136	1	30
2-Butanone	37.5	35.63	37.5	34.78	95	93	59-141	2	30
Carbon Disulfide	5.00	3.94	5.00	3.88	79	78	67-130	2	30
Carbon Tetrachloride	5.00	5.66	5.00	5.52	113	110	64-141	3	30
Chlorobenzene	5.00	4.99	5.00	4.95	100	99	80-120	1	30
Chloroethane	5.00	4.57	5.00	4.70	91	94	63-120	3	30
Chloroform	5.00	5.34	5.00	5.34	107	107	80-120	0	30
Chloromethane	5.00	4.34	5.00	4.30	87	86	56-124	1	30
Dibromochloromethane	5.00	5.36	5.00	5.36	107	107	64-138	0	30
1,1-Dichloroethane	5.00	4.82	5.00	4.78	96	96	74-120	1	30
1,2-Dichloroethane	5.00	5.71	5.00	5.57	114	111	69-122	2	30
1,1-Dichloroethene	5.00	4.84	5.00	4.63	97	93	80-131	4	30
cis-1,2-Dichloroethene	5.00	5.23	5.00	5.07	105	101	80-122	3	30
trans-1,2-Dichloroethene	5.00	4.73	5.00	4.70	95	94	80-122	1	30
1,2-Dichloropropane	5.00	4.94	5.00	4.96	99	99	80-120	0	30
cis-1,3-Dichloropropene	5.00	4.87	5.00	4.80	97	96	67-121	1	30
trans-1,3-Dichloropropene	5.00	4.88	5.00	4.80	98	96	61-129	2	30
Ethylbenzene	5.00	5.12	5.00	5.05	102	101	80-120	1	30
2-Hexanone	25	25.13	25	24.65	101	99	52-140	2	30
4-Methyl-2-pentanone	25	25.56	25	24.45	102	98	55-140	4	30
Methylene Chloride	5.00	4.75	5.00	4.67	95	93	80-120	2	30
Styrene	5.00	5.20	5.00	5.15	104	103	80-120	1	30
1,1,2,2-Tetrachloroethane	5.00	4.79	5.00	4.82	96	96	75-123	1	30
Tetrachloroethene	5.00	5.26	5.00	5.30	105	106	80-120	1	30
Toluene	5.00	5.00	5.00	5.11	100	102	80-120	2	30
112Trichloro122Trifluoroethane	5.00	4.54	5.00	4.45	91	89	75-133	2	30
1,1,1-Trichloroethane	5.00	5.57	5.00	5.50	111	110	78-126	1	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 10:57

Group Number: 2086956

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1,2-Trichloroethane	5.00	5.30	5.00	5.22	106	104	80-120	1	30
Trichloroethene	5.00	5.01	5.00	4.99	100	100	80-120	0	30
Trichlorofluoromethane	5.00	5.91	5.00	5.78	118	116	62-136	2	30
Vinyl Acetate	12.5	13.6	12.5	13.52	109	108	38-145	1	30
Vinyl Chloride	5.00	4.42	5.00	4.35	88	87	60-125	2	30
m+p-Xylene	10	10.29	10	10.13	103	101	80-120	2	30
o-Xylene	5.00	5.03	5.00	4.95	101	99	80-120	2	30
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 200430025A	Sample number(s): 1255985-1255986								
Diesel/#2 Fuel w/Si Gel	0.800	0.764	0.800	0.938	95	117	60-120	20	20
DRO C12-C24 w/Si Gel	0.800	0.618	0.800	0.759	77	95	60-120	20	20
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20039720213A	Sample number(s): 1255985-1255986								
Nitrate Nitrogen	0.750	0.716			95		90-110		
Sulfate	7.50	7.23			96		90-110		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20044807801A	Sample number(s): 1255985								
SGT-HEM (TPH)	20	15.7	20	16.1	79	81	64-132	3	23
Batch number: 20044807901A	Sample number(s): 1255985								
HEM (oil & grease)	40	39.7	40	39.4	99	99	78-114	1	13

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 20044807801A	Sample number(s): 1255985 UNSPK: 1255985									
SGT-HEM (TPH)	5.0 U	22.2	20.33			92		64-132		
Batch number: 20044807901A	Sample number(s): 1255985 UNSPK: 1255985									
HEM (oil & grease)	5.0 U	44.4	38.89			88		78-114		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 10:57

Group Number: 2086956

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: I200491AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1255987	105	98	93	92
Blank	104	96	93	93
LCS	104	95	93	96
LCSD	101	100	94	95
Limits:	80-120	80-120	80-120	80-120

Analysis Name: 8260C Boeing 38
Batch number: I200501AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1255985	99	96	96	93
Blank	100	102	95	92
LCS	98	103	95	94
LCSD	99	95	96	94
Limits:	80-120	80-120	80-120	80-120

Analysis Name: NWTPH-Dx Water w/ Silica Gel
Batch number: 200430025A

	Chlorobenzene	Orthoterphenyl
1255985	56	80
1255986	74	1242*
Blank	90	102
LCS	88	107
LCSD	108	120
Limits:	50-150	50-150

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 13419 For Eurofins Lancaster Laboratories Environmental use only Group # 1786956 Sample # 1255985-87

Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Gresham, Oregon
Site Project: Boeing of Portland
Site Program/#: 00251lb.120.412
Boeing PM: Debbie Taege
Consultant Contact: Chris Kimmel
Report To: Above
Invoice To: [X] Boeing EHS [ ] Other (specify):
Sampler: GJN/WHL # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	TPH-Dx	VOC (38 List)	EDB	Sulfate	Nitrate	(4) Analyses Requested	(5) Remarks/Comments
LAI-7-0210	01/07/10	1111	H2O	9	X	X	X	X	X		
LAI-8-0110	01/07/10	1047	H2O	4	X	[illegible]	[illegible]	X	X		
Trip Blanks	—	—	H2O	2	X						

Page 16 of 19

(6) **Turnaround Time Requested** (please circle)

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

Date needed: _____

Relinquished by: [signature]	Date/Time 01/08/10 1603	Received by:	Date/Time (7)
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: [signature]	Date/Time 1-9-10 0911
Relinquished by commercial carrier (circle): UPS FedEx Other:		Temperature upon Receipt: 13 °C Custody Seals Intact?: (Yes) No	

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.

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 275064

Group Number(s): 2486956

Client: BOEING

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Date:	02/08/2020
Number of Packages:	1	Number of Projects:	2

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	2
Samples Chilled:	Yes	Trip Blank Type:	HCl
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Julissa Rivera-Santa

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	46730060WS	1.3	IR	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

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

Tests 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.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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. 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. 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.

eurofins | Lancaster Laboratories Environmental

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 9U4-26
Seattle WA 98124-2207

Report Date: February 21, 2020 20:57

Project: Boeing of Portland/0025116.120.412

Account #: 13419
Group Number: 2087203
PO Number: 0025116.120.412
State of Sample Origin: OR

Electronic Copy To	Landau	Attn: Chris Kimmel
Electronic Copy To	Landau Associates	Attn: Dani Jorgensen
Electronic Copy To	Landau	Attn: Erin Waibel
Electronic Copy To	Landau Associates	Attn: Laura Lafferty

Respectfully Submitted,

Kay Hower

(717) 556-7364

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
E-6-0220 Water	02/10/2020 11:25	1257112
E-7-0220 Water	02/10/2020 10:33	1257113
BOP-9i-0220 Water	02/10/2020 09:21	1257114
BOP-10i-0220 Water	02/10/2020 12:57	1257115
BOP-83i-0220 Water	02/10/2020 15:15	1257116
BOP-83i-0220 Total Metals Water	02/10/2020 15:15	1257117
BOP-83i-0220 Dissolved Metals Water	02/10/2020 15:15	1257118
BOP-X-0220 Water	02/10/2020 13:30	1257119
Trip Blanks Water	02/10/2020	1257120

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Project Name: Boeing of Portland/0025116.120.412
ELLE Group #: 2087203

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Preservation requirements were not met.

Sample #: 1257113

Preservation requirements were not met. The pH preservation of all non-volatile containers was checked upon receipt at the laboratory. The container for the following analysis was not within the specification and was adjusted accordingly by the laboratory: Total Organic Carbon

Analysis Specific Comments:

SW-846 8260C 25mL purge, GC/MS Volatiles

Sample #s: 1257113

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

Due to the need for reanalysis of the sample, the requirement for no headspace was not met. The trial 3 and trial 4 analysis were performed from a previously opened container with headspace.

The recovery for the sample internal standard is outside the QC acceptance limits for trial 2. The following action was taken: The sample was re-analyzed and the QC is again outside of the acceptance limits for trial 3, indicating a matrix effect. The data is reported from both trials.

Sample #s: 1257114, 1257116, 1257120

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

Sample #s: 1257119

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

Due to the need for reanalysis of the sample, the requirement for no headspace was not met. The trial 2 analysis was performed from a previously opened container with headspace.

Sample #s: 1257115

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in trial 1 of this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

The analysis was repeated and the continuing calibration verification standard bracketing the sample on the second trial is within specification.

Batch #: I200491AA (Sample number(s): 1257114-1257116, 1257119-1257120)

The recovery(ies) for the following analyte(s) in the LCS and/or LCSD exceeded the acceptance window indicating a positive bias: 1,2-Dichloroethane

RSKSOP-175 modified, GC Miscellaneous

Sample #s: 1257113

Preservation requirements were not met.
A preserved vial was submitted for analysis. However, the pH at the time of analysis of trial 1 was 5.

Preservation requirements were not met.
A preserved vial was submitted for analysis. However, the pH at the time of analysis of trial 2 and 3 was 7.

Batch #: 200440003A (Sample number(s): 1257112-1257116)

The recovery(ies) for one or more surrogates exceeded the acceptance window indicating a positive bias for sample(s) 1257113, 1257113RE

EPA 300.0, Wet Chemistry

Sample #s: 1257115

Reporting limits were raised due to interference from the sample matrix.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Sample Description: **E-6-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 11:25

The Boeing Company
ELLE Sample #: WW 1257112
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**13**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**7.1**		0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**1.2**		0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.4**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**85**	**E**	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	Acetone	67-64-1	50	U	50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	2-Butanone	78-93-3	50	U	50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10

Sample Description: **E-6-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 11:25

The Boeing Company
ELLE Sample #: WW 1257112
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Chloroethane	75-00-3	5.0 U	5.0	10
11996	Chloroform	67-66-3	2.0 U	2.0	10
11996	Chloromethane	74-87-3	5.0 U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0 U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0 U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0 U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0 U	2.0	10
11996	**cis-1,2-Dichloroethene**	156-59-2	**6.3**	2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0 U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0 U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0 U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0 U	2.0	10
11996	Ethylbenzene	100-41-4	5.0 U	5.0	10
11996	2-Hexanone	591-78-6	50 U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50 U	50	10
11996	Methylene Chloride	75-09-2	5.0 U	5.0	10
11996	Styrene	100-42-5	5.0 U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0 U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0 U	2.0	10
11996	Toluene	108-88-3	2.0 U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0 U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0 U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0 U	2.0	10
11996	Trichloroethene	79-01-6	2.0 U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0 U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0 U	5.0	10
11996	**Vinyl Chloride**	75-01-4	**74**	2.0	10
11996	m+p-Xylene	179601-23-1	5.0 U	5.0	10
11996	o-Xylene	95-47-6	5.0 U	5.0	10
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**4,100 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	100 U	100	20
07105	Ethane	74-84-0	100 U	100	20
07105	Ethene	74-85-1	100 U	100	20
07105	**Methane**	74-82-8	**7,200**	100	20
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00228	Sulfate	14808-79-8	5.0 U	5.0	5
00228	**Sulfate**	14808-79-8	**1.8**	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**15.0**	10.0	10

Sample Description: **E-6-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 11:25

The Boeing Company
ELLE Sample #: WW 1257112
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200501AA	02/19/2020 15:39	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	I200501AA	02/19/2020 16:00	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200501AA	02/19/2020 15:38	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	I200501AA	02/19/2020 15:59	Jennifer K Howe	10
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200440003A	02/13/2020 11:51	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200440003A	02/14/2020 19:53	Johanna C Kennedy	20
00228	Sulfate	EPA 300.0	1	20044135209B	02/14/2020 07:32	Kevin Litwa	5
00228	Sulfate	EPA 300.0	2	20044135209B	02/17/2020 17:50	Kevin Litwa	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20050304502B	02/19/2020 19:27	Bethany Sandone	10

Sample Description: **E-7-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 10:33

The Boeing Company
ELLE Sample #: WW 1257113
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**81**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**2,700**	**E**	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**0.8**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**18**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	**2-Hexanone**	591-78-6	**81**		5.0	1
11996	**4-Methyl-2-pentanone**	108-10-1	**160**		5.0	1
11996	**Methylene Chloride**	75-09-2	**2.3**		0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**4.7**		0.2	1
11996	**Toluene**	108-88-3	**1**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**27**	**E**	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.3**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	**Acetone**	67-64-1	**100**		50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**5,100**	**E**	50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10

Sample Description: **E-7-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 10:33

The Boeing Company
ELLE Sample #: WW 1257113
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	**cis-1,2-Dichloroethene**	156-59-2	**19**		2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	**2-Hexanone**	591-78-6	**160**		50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	**Tetrachloroethene**	127-18-4	**4.5**		2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	**Trichloroethene**	79-01-6	**27**		2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10
Trial ID: DL2						
11996	Acetone	67-64-1	500	U	500	100
11996	Benzene	71-43-2	20	U	20	100
11996	Bromodichloromethane	75-27-4	50	U	50	100
11996	Bromoform	75-25-2	50	U	50	100
11996	Bromomethane	74-83-9	50	U	50	100
11996	**2-Butanone**	78-93-3	**5,400**		500	100
11996	Carbon Disulfide	75-15-0	50	U	50	100
11996	Carbon Tetrachloride	56-23-5	20	U	20	100
11996	Chlorobenzene	108-90-7	50	U	50	100
11996	Chloroethane	75-00-3	50	U	50	100
11996	Chloroform	67-66-3	20	U	20	100
11996	Chloromethane	74-87-3	50	U	50	100
11996	Dibromochloromethane	124-48-1	50	U	50	100
11996	1,1-Dichloroethane	75-34-3	50	U	50	100
11996	1,2-Dichloroethane	107-06-2	20	U	20	100
11996	1,1-Dichloroethene	75-35-4	20	U	20	100

Sample Description: **E-7-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 10:33

The Boeing Company
ELLE Sample #: WW 1257113
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**21**		20	100
11996	trans-1,2-Dichloroethene	156-60-5	20	U	20	100
11996	1,2-Dichloropropane	78-87-5	50	U	50	100
11996	cis-1,3-Dichloropropene	10061-01-5	20	U	20	100
11996	trans-1,3-Dichloropropene	10061-02-6	20	U	20	100
11996	Ethylbenzene	100-41-4	50	U	50	100
11996	2-Hexanone	591-78-6	500	U	500	100
11996	4-Methyl-2-pentanone	108-10-1	500	U	500	100
11996	Methylene Chloride	75-09-2	50	U	50	100
11996	Styrene	100-42-5	50	U	50	100
11996	1,1,2,2-Tetrachloroethane	79-34-5	20	U	20	100
11996	Tetrachloroethene	127-18-4	20	U	20	100
11996	Toluene	108-88-3	20	U	20	100
11996	112Trichloro122Trifluoroethane	76-13-1	50	U	50	100
11996	1,1,1-Trichloroethane	71-55-6	50	U	50	100
11996	1,1,2-Trichloroethane	79-00-5	20	U	20	100
11996	**Trichloroethene**	79-01-6	**29**		20	100
11996	Trichlorofluoromethane	75-69-4	50	U	50	100
11996	Vinyl Acetate	108-05-4	50	U	50	100
11996	Vinyl Chloride	75-01-4	20	U	20	100
11996	m+p-Xylene	179601-23-1	50	U	50	100
11996	o-Xylene	95-47-6	50	U	50	100
Trial ID: DLRE						
11996	**Acetone**	67-64-1	**130**		50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**5,300**	**E**	50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	**cis-1,2-Dichloroethene**	156-59-2	**20**		2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	**2-Hexanone**	591-78-6	**140**		50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10

Sample Description: **E-7-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 10:33

The Boeing Company
ELLE Sample #: WW 1257113
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	**Tetrachloroethene**	127-18-4	**4.9**		2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	**Trichloroethene**	79-01-6	**27**		2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

Due to the need for reanalysis of the sample, the requirement for no headspace was not met. The trial 3 and trial 4 analysis were performed from a previously opened container with headspace.

The recovery for the sample internal standard is outside the QC acceptance limits for trial 2. The following action was taken: The sample was re-analyzed and the QC is again outside of the acceptance limits for trial 3, indicating a matrix effect. The data is reported from both trials.

GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	Ethane	74-84-0	5.0	U	5.0	1
07105	**Ethene**	74-85-1	**5.2**		5.0	1
07105	**Methane**	74-82-8	**9,400**	**E**	5.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	250	U	250	50
07105	Ethane	74-84-0	250	U	250	50
07105	Ethene	74-85-1	250	U	250	50
07105	**Methane**	74-82-8	**17,000**		250	50
Trial ID: RE						
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	Ethane	74-84-0	5.0	U	5.0	1
07105	**Ethene**	74-85-1	**5.3**		5.0	1
07105	**Methane**	74-82-8	**7,800**	**E**	5.0	1

Preservation requirements were not met.
A preserved vial was submitted for analysis. However, the pH at the time of analysis of trial 1 was 5.

Sample Description: **E-7-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 10:33

The Boeing Company
ELLE Sample #: WW 1257113
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
	Preservation requirements were not met. A preserved vial was submitted for analysis. However, the pH at the time of analysis of trial 2 and 3 was 7.				
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00228	**Sulfate**	14808-79-8	**688**	50.0	50
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**22,200**	500	500

Sample Comments

Preservation requirements were not met. The pH preservation of all non-volatile containers was checked upon receipt at the laboratory. The container for the following analysis was not within the specification and was adjusted accordingly by the laboratory: Total Organic Carbon

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200501AA	02/19/2020 19:11	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	I200501AA	02/19/2020 19:32	Jennifer K Howe	10
11996	8260C Boeing 38	SW-846 8260C 25mL purge	3-DLRE	I200511AA	02/20/2020 19:02	Jennifer K Howe	10
11996	8260C Boeing 38	SW-846 8260C 25mL purge	4-DL2	I200511AA	02/20/2020 19:23	Jennifer K Howe	100
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200501AA	02/19/2020 19:10	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	I200501AA	02/19/2020 19:31	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	3	I200511AA	02/20/2020 19:01	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	4	I200511AA	02/20/2020 19:22	Jennifer K Howe	100
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200440003A	02/13/2020 12:09	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	3-RE	200440003A	02/14/2020 19:35	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200440003A	02/14/2020 20:16	Johanna C Kennedy	50
00228	Sulfate	EPA 300.0	1	20044135209B	02/14/2020 07:51	Kevin Litwa	50
00273	Total Organic Carbon	SM 5310 C-2011	1	20050304502B	02/19/2020 19:40	Bethany Sandone	500

Sample Description: **BOP-9i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 09:21

The Boeing Company
ELLE Sample #: WW 1257114
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**21**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**840**	**E**	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.1**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**100**	**E**	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.9**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.5**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	Acetone	67-64-1	50	U	50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**990**		50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10

Sample Description: **BOP-9i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 09:21

The Boeing Company
ELLE Sample #: WW 1257114
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	**Toluene**	108-88-3	**210**		2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	Ethane	74-84-0	5.0	U	5.0	1
07105	Ethene	74-85-1	5.0	U	5.0	1
07105	**Methane**	74-82-8	**19,000**	**E**	5.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	500	U	500	100

Sample Description: **BOP-9i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 09:21

The Boeing Company
ELLE Sample #: WW 1257114
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Ethane	74-84-0	500	U	500	100
07105	Ethene	74-85-1	500	U	500	100
07105	**Methane**	74-82-8	**36,000**		500	100
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**6.2**		5.0	5
	SM 5310 C-2011		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**586**		250	250

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200491AA	02/18/2020 15:59	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	I200491AA	02/18/2020 16:20	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200491AA	02/18/2020 15:58	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	I200491AA	02/18/2020 16:19	Jennifer K Howe	10
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200440003A	02/13/2020 12:27	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200440003A	02/14/2020 20:52	Johanna C Kennedy	100
00228	Sulfate	EPA 300.0	1	20044135209B	02/14/2020 08:28	Kevin Litwa	5
00273	Total Organic Carbon	SM 5310 C-2011	1	20050304502B	02/19/2020 19:54	Bethany Sandone	250

Sample Description: **BOP-10i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 12:57

The Boeing Company
ELLE Sample #: WW 1257115
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**28**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**170**		5.0	1
11996	**Carbon Disulfide**	75-15-0	**0.6**		0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**0.6**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**7.9**		0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**0.5**		0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	**2-Hexanone**	591-78-6	**17**		5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**4.7**		0.2	1
11996	**Toluene**	108-88-3	**0.9**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**26**	**E**	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.4**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	Acetone	67-64-1	50	U	50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**230**		50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10

Sample Description: **BOP-10i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 12:57

The Boeing Company
ELLE Sample #: WW 1257115
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	**cis-1,2-Dichloroethene**	156-59-2	**8.9**		2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	**Tetrachloroethene**	127-18-4	**5.5**		2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	**Trichloroethene**	79-01-6	**29**		2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in trial 1 of this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

The analysis was repeated and the continuing calibration verification standard bracketing the sample on the second trial is within specification.

GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1

Sample Description: **BOP-10i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 12:57

The Boeing Company
ELLE Sample #: WW 1257115
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**5,300 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	250 U	250	50
07105	Ethane	74-84-0	250 U	250	50
07105	Ethene	74-85-1	250 U	250	50
07105	**Methane**	74-82-8	**9,300**	250	50
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00228	Sulfate	14808-79-8	50.0 U	50.0	50
	Reporting limits were raised due to interference from the sample matrix.				
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**2,470**	500	500

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200491AA	02/18/2020 17:23	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	I200501AA	02/19/2020 12:26	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200491AA	02/18/2020 17:22	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	I200501AA	02/19/2020 12:25	Jennifer K Howe	10
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200440003A	02/13/2020 12:46	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200440003A	02/14/2020 21:09	Johanna C Kennedy	50
00228	Sulfate	EPA 300.0	1	20044135209B	02/14/2020 08:47	Kevin Litwa	50
00273	Total Organic Carbon	SM 5310 C-2011	1	20050304502B	02/19/2020 20:07	Bethany Sandone	500

Sample Description: **BOP-83i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 15:15

The Boeing Company
ELLE Sample #: WW 1257116
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**16**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**0.7**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**16**		0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**0.3**		0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**3.8**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

Sample Description: **BOP-83i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 15:15

The Boeing Company
ELLE Sample #: WW 1257116
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**190**	5.0	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**0.14**	0.10	1
00228	**Sulfate**	14808-79-8	**2.2**	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**3.2**	1.0	1
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200491AA	02/18/2020 15:38	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200491AA	02/18/2020 15:37	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200440003A	02/13/2020 13:04	Johanna C Kennedy	1
00368	Nitrate Nitrogen	EPA 300.0	1	20042076209A	02/12/2020 16:42	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20042076209A	02/12/2020 16:42	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20050304502B	02/19/2020 20:33	Bethany Sandone	1
01333	Sulfide	EPA 376.1	1	20044133301A	02/13/2020 09:43	Nicole Munsell	1

Sample Description: **BOP-83i-0220 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 15:15

The Boeing Company
ELLE Sample #: WW 1257117
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**27.3**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200421404403	02/12/2020 23:00	Cindy M Gehman	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200421404403	02/12/2020 03:54	James L Mertz	1

Sample Description: **BOP-83i-0220 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 15:15

The Boeing Company
ELLE Sample #: WW 1257118
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**0.531**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200421486603	02/13/2020 09:48	Lisa J Cooke	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200421486603	02/12/2020 06:00	James L Mertz	1

Sample Description: **BOP-X-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 13:30

The Boeing Company
ELLE Sample #: WW 1257119
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**32**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**160**		5.0	1
11996	**Carbon Disulfide**	75-15-0	**0.6**		0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**0.6**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**7.5**		0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**0.6**		0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	**2-Hexanone**	591-78-6	**18**		5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**6.7**		0.2	1
11996	**Toluene**	108-88-3	**0.9**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**27**	**E**	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.5**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	Acetone	67-64-1	50	U	50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**180**		50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10

Sample Description: **BOP-X-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 13:30

The Boeing Company
ELLE Sample #: WW 1257119
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	**cis-1,2-Dichloroethene**	156-59-2	**7.4**		2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	**Tetrachloroethene**	127-18-4	**6.1**		2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	**Trichloroethene**	79-01-6	**27**		2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

Due to the need for reanalysis of the sample, the requirement for no headspace was not met. The trial 2 analysis was performed from a previously opened container with headspace.

Sample Description: **BOP-X-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 13:30

The Boeing Company
ELLE Sample #: WW 1257119
ELLE Group #: 2087203
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200491AA	02/18/2020 16:41	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	I200491AA	02/18/2020 17:02	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200491AA	02/18/2020 16:40	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	I200491AA	02/18/2020 17:01	Jennifer K Howe	10

Sample Description: **Trip Blanks Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020

The Boeing Company
ELLE Sample #: WW 1257120
ELLE Group #: 2087203
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Acetone	67-64-1	5.0 U	5.0	1
11996	Benzene	71-43-2	0.2 U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5 U	0.5	1
11996	Bromoform	75-25-2	0.5 U	0.5	1
11996	Bromomethane	74-83-9	0.5 U	0.5	1
11996	2-Butanone	78-93-3	5.0 U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5 U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2 U	0.2	1
11996	Chlorobenzene	108-90-7	0.5 U	0.5	1
11996	Chloroethane	75-00-3	0.5 U	0.5	1
11996	Chloroform	67-66-3	0.2 U	0.2	1
11996	Chloromethane	74-87-3	0.5 U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5 U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5 U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2 U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2 U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2 U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2 U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5 U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2 U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2 U	0.2	1
11996	Ethylbenzene	100-41-4	0.5 U	0.5	1
11996	2-Hexanone	591-78-6	5.0 U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0 U	5.0	1
11996	Methylene Chloride	75-09-2	0.5 U	0.5	1
11996	Styrene	100-42-5	0.5 U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2 U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2 U	0.2	1
11996	Toluene	108-88-3	0.2 U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5 U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5 U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2 U	0.2	1
11996	Trichloroethene	79-01-6	0.2 U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5 U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5 U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2 U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5 U	0.5	1
11996	o-Xylene	95-47-6	0.5 U	0.5	1

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
trichlorofluoromethane	24
1,1,1-trichloroethane	23
carbon tetrachloride	24

Sample Description: **Trip Blanks Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020

The Boeing Company
ELLE Sample #: WW 1257120
ELLE Group #: 2087203
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200491AA	02/18/2020 12:27	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200491AA	02/18/2020 12:26	Jennifer K Howe	1

Quality Control Summary

Client Name: The Boeing Company Group Number: 2087203
Reported: 02/21/2020 20:57

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 was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: I200491AA	Sample number(s): 1257114-1257116,1257119-1257120		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company Group Number: 2087203
Reported: 02/21/2020 20:57

Method Blank (continued)

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: I200501AA	Sample number(s): 1257112-1257113,1257115		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5
Batch number: I200511AA	Sample number(s): 1257113		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/21/2020 20:57

Group Number: 2087203

Method Blank (continued)

Analysis Name	Result		LOQ
	ug/l		ug/l
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5
Batch number: 200440003A	Sample number(s): 1257112-1257116		
Acetylene	5.0	U	5.0
Ethane	5.0	U	5.0
Ethene	5.0	U	5.0
Methane	5.0	U	5.0
	mg/l		mg/l
Batch number: 200421404403	Sample number(s): 1257117		
Iron	0.200	U	0.200
Batch number: 200421486603	Sample number(s): 1257118		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/21/2020 20:57

Group Number: 2087203

Method Blank (continued)

Analysis Name	Result	LOQ
	mg/l	mg/l
Iron	0.206 U	0.206
Batch number: 20042076209A	Sample number(s): 1257116	
Nitrate Nitrogen	0.10 U	0.10
Sulfate	1.0 U	1.0
Batch number: 20044135209B	Sample number(s): 1257112-1257115	
Sulfate	1.0 U	1.0
Batch number: 20050304502B	Sample number(s): 1257112-1257116	
Total Organic Carbon	1.0 U	1.0
Batch number: 20044133301A	Sample number(s): 1257116	
Sulfide	2.0 U	2.0

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: I200491AA	Sample number(s): 1257114-1257116,1257119-1257120								
Acetone	37.5	34.03	37.5	32.73	91	87	60-146	4	30
Benzene	5.00	5.05	5.00	5.00	101	100	80-120	1	30
Bromodichloromethane	5.00	5.74	5.00	5.70	115	114	73-124	1	30
Bromoform	5.00	5.71	5.00	5.74	114	115	49-144	1	30
Bromomethane	5.00	4.78	5.00	4.72	96	94	60-136	1	30
2-Butanone	37.5	32.67	37.5	32.03	87	85	59-141	2	30
Carbon Disulfide	5.00	4.02	5.00	4.09	80	82	67-130	2	30
Carbon Tetrachloride	5.00	6.21	5.00	6.29	124	126	64-141	1	30
Chlorobenzene	5.00	5.05	5.00	5.21	101	104	80-120	3	30
Chloroethane	5.00	4.48	5.00	4.59	90	92	63-120	3	30
Chloroform	5.00	5.59	5.00	5.66	112	113	80-120	1	30
Chloromethane	5.00	4.18	5.00	4.26	84	85	56-124	2	30
Dibromochloromethane	5.00	5.59	5.00	5.65	112	113	64-138	1	30
1,1-Dichloroethane	5.00	4.83	5.00	4.93	97	99	74-120	2	30
1,2-Dichloroethane	5.00	6.15	5.00	6.20	123*	124*	69-122	1	30
1,1-Dichloroethene	5.00	4.82	5.00	4.89	96	98	80-131	1	30
cis-1,2-Dichloroethene	5.00	5.34	5.00	5.49	107	110	80-122	3	30
trans-1,2-Dichloroethene	5.00	4.90	5.00	5.02	98	100	80-122	2	30
1,2-Dichloropropane	5.00	4.94	5.00	5.00	99	100	80-120	1	30
cis-1,3-Dichloropropene	5.00	4.97	5.00	5.05	99	101	67-121	1	30
trans-1,3-Dichloropropene	5.00	4.79	5.00	5.12	96	102	61-129	7	30
Ethylbenzene	5.00	5.12	5.00	5.27	102	105	80-120	3	30
2-Hexanone	25	22.5	25	21.95	90	88	52-140	2	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/21/2020 20:57

Group Number: 2087203

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
4-Methyl-2-pentanone	25	22.51	25	22.22	90	89	55-140	1	30
Methylene Chloride	5.00	4.95	5.00	5.04	99	101	80-120	2	30
Styrene	5.00	5.16	5.00	5.36	103	107	80-120	4	30
1,1,2,2-Tetrachloroethane	5.00	4.76	5.00	4.82	95	96	75-123	1	30
Tetrachloroethene	5.00	5.42	5.00	5.52	108	110	80-120	2	30
Toluene	5.00	5.17	5.00	5.17	103	103	80-120	0	30
112Trichloro122Trifluoroethane	5.00	4.82	5.00	4.85	96	97	75-133	1	30
1,1,1-Trichloroethane	5.00	5.97	5.00	6.12	119	122	78-126	2	30
1,1,2-Trichloroethane	5.00	5.16	5.00	5.44	103	109	80-120	5	30
Trichloroethene	5.00	5.21	5.00	5.29	104	106	80-120	1	30
Trichlorofluoromethane	5.00	6.33	5.00	6.33	127	127	62-136	0	30
Vinyl Acetate	12.5	13.13	12.5	13.18	105	105	38-145	0	30
Vinyl Chloride	5.00	4.49	5.00	4.54	90	91	60-125	1	30
m+p-Xylene	10	10.48	10	10.7	105	107	80-120	2	30
o-Xylene	5.00	5.11	5.00	5.26	102	105	80-120	3	30
Batch number: I200501AA	Sample number(s): 1257112-1257113,1257115								
Acetone	37.5	36.49	37.5	36.04	97	96	60-146	1	30
Benzene	5.00	4.83	5.00	4.90	97	98	80-120	1	30
Bromodichloromethane	5.00	5.52	5.00	5.41	110	108	73-124	2	30
Bromoform	5.00	5.38	5.00	5.36	108	107	49-144	0	30
Bromomethane	5.00	4.58	5.00	4.55	92	91	60-136	1	30
2-Butanone	37.5	35.63	37.5	34.78	95	93	59-141	2	30
Carbon Disulfide	5.00	3.94	5.00	3.88	79	78	67-130	2	30
Carbon Tetrachloride	5.00	5.66	5.00	5.52	113	110	64-141	3	30
Chlorobenzene	5.00	4.99	5.00	4.95	100	99	80-120	1	30
Chloroethane	5.00	4.57	5.00	4.70	91	94	63-120	3	30
Chloroform	5.00	5.34	5.00	5.34	107	107	80-120	0	30
Chloromethane	5.00	4.34	5.00	4.30	87	86	56-124	1	30
Dibromochloromethane	5.00	5.36	5.00	5.36	107	107	64-138	0	30
1,1-Dichloroethane	5.00	4.82	5.00	4.78	96	96	74-120	1	30
1,2-Dichloroethane	5.00	5.71	5.00	5.57	114	111	69-122	2	30
1,1-Dichloroethene	5.00	4.84	5.00	4.63	97	93	80-131	4	30
cis-1,2-Dichloroethene	5.00	5.23	5.00	5.07	105	101	80-122	3	30
trans-1,2-Dichloroethene	5.00	4.73	5.00	4.70	95	94	80-122	1	30
1,2-Dichloropropane	5.00	4.94	5.00	4.96	99	99	80-120	0	30
cis-1,3-Dichloropropene	5.00	4.87	5.00	4.80	97	96	67-121	1	30
trans-1,3-Dichloropropene	5.00	4.88	5.00	4.80	98	96	61-129	2	30
Ethylbenzene	5.00	5.12	5.00	5.05	102	101	80-120	1	30
2-Hexanone	25	25.13	25	24.65	101	99	52-140	2	30
4-Methyl-2-pentanone	25	25.56	25	24.45	102	98	55-140	4	30
Methylene Chloride	5.00	4.75	5.00	4.67	95	93	80-120	2	30
Styrene	5.00	5.20	5.00	5.15	104	103	80-120	1	30
1,1,2,2-Tetrachloroethane	5.00	4.79	5.00	4.82	96	96	75-123	1	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/21/2020 20:57

Group Number: 2087203

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Tetrachloroethene	5.00	5.26	5.00	5.30	105	106	80-120	1	30
Toluene	5.00	5.00	5.00	5.11	100	102	80-120	2	30
112Trichloro122Trifluoroethane	5.00	4.54	5.00	4.45	91	89	75-133	2	30
1,1,1-Trichloroethane	5.00	5.57	5.00	5.50	111	110	78-126	1	30
1,1,2-Trichloroethane	5.00	5.30	5.00	5.22	106	104	80-120	1	30
Trichloroethene	5.00	5.01	5.00	4.99	100	100	80-120	0	30
Trichlorofluoromethane	5.00	5.91	5.00	5.78	118	116	62-136	2	30
Vinyl Acetate	12.5	13.6	12.5	13.52	109	108	38-145	1	30
Vinyl Chloride	5.00	4.42	5.00	4.35	88	87	60-125	2	30
m+p-Xylene	10	10.29	10	10.13	103	101	80-120	2	30
o-Xylene	5.00	5.03	5.00	4.95	101	99	80-120	2	30
Batch number: I200511AA	Sample number(s): 1257113								
Acetone	37.5	37.71	37.5	38.57	101	103	60-146	2	30
Benzene	5.00	5.07	5.00	5.12	101	102	80-120	1	30
Bromodichloromethane	5.00	5.63	5.00	5.61	113	112	73-124	0	30
Bromoform	5.00	5.53	5.00	5.59	111	112	49-144	1	30
Bromomethane	5.00	4.73	5.00	4.75	95	95	60-136	0	30
2-Butanone	37.5	36.99	37.5	38.75	99	103	59-141	5	30
Carbon Disulfide	5.00	4.12	5.00	4.12	82	82	67-130	0	30
Carbon Tetrachloride	5.00	5.90	5.00	6.04	118	121	64-141	2	30
Chlorobenzene	5.00	5.24	5.00	5.29	105	106	80-120	1	30
Chloroethane	5.00	4.75	5.00	4.80	95	96	63-120	1	30
Chloroform	5.00	5.54	5.00	5.59	111	112	80-120	1	30
Chloromethane	5.00	4.33	5.00	4.39	87	88	56-124	2	30
Dibromochloromethane	5.00	5.61	5.00	5.66	112	113	64-138	1	30
1,1-Dichloroethane	5.00	5.04	5.00	5.00	101	100	74-120	1	30
1,2-Dichloroethane	5.00	5.96	5.00	6.02	119	120	69-122	1	30
1,1-Dichloroethene	5.00	4.88	5.00	4.96	98	99	80-131	2	30
cis-1,2-Dichloroethene	5.00	5.31	5.00	5.35	106	107	80-122	1	30
trans-1,2-Dichloroethene	5.00	4.93	5.00	5.08	99	102	80-122	3	30
1,2-Dichloropropane	5.00	5.10	5.00	5.18	102	104	80-120	2	30
cis-1,3-Dichloropropene	5.00	5.07	5.00	5.13	101	103	67-121	1	30
trans-1,3-Dichloropropene	5.00	5.18	5.00	5.22	104	104	61-129	1	30
Ethylbenzene	5.00	5.35	5.00	5.32	107	106	80-120	0	30
2-Hexanone	25	25.88	25	26.71	104	107	52-140	3	30
4-Methyl-2-pentanone	25	26.79	25	27.05	107	108	55-140	1	30
Methylene Chloride	5.00	4.91	5.00	4.94	98	99	80-120	1	30
Styrene	5.00	5.40	5.00	5.40	108	108	80-120	0	30
1,1,2,2-Tetrachloroethane	5.00	5.08	5.00	5.17	102	103	75-123	2	30
Tetrachloroethene	5.00	5.59	5.00	5.61	112	112	80-120	0	30
Toluene	5.00	5.26	5.00	5.37	105	107	80-120	2	30
112Trichloro122Trifluoroethane	5.00	4.96	5.00	5.01	99	100	75-133	1	30
1,1,1-Trichloroethane	5.00	5.75	5.00	5.84	115	117	78-126	2	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/21/2020 20:57

Group Number: 2087203

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1,2-Trichloroethane	5.00	5.47	5.00	5.53	109	111	80-120	1	30
Trichloroethene	5.00	5.22	5.00	5.26	104	105	80-120	1	30
Trichlorofluoromethane	5.00	6.18	5.00	6.23	124	125	62-136	1	30
Vinyl Acetate	12.5	13.55	12.5	13.57	108	109	38-145	0	30
Vinyl Chloride	5.00	4.62	5.00	4.62	92	92	60-125	0	30
m+p-Xylene	10	10.66	10	10.6	107	106	80-120	1	30
o-Xylene	5.00	5.31	5.00	5.27	106	105	80-120	1	30
	ug/l	**ug/l**	**ug/l**	**ug/l**					
Batch number: 200440003A	Sample number(s): 1257112-1257116								
Acetylene	51.25	53.32	51.25	49.69	104	97	57-146	7	20
Ethane	59.39	61.74	59.39	60.18	104	101	85-115	3	20
Ethene	60.4	62.44	60.4	60.86	103	101	83-115	3	20
Methane	59.42	62.64	59.42	61.08	105	103	85-115	3	20
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 200421404403	Sample number(s): 1257117								
Iron	0.400	0.425			106		80-120		
Batch number: 200421486603	Sample number(s): 1257118								
Iron	0.400	0.397			99		80-120		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20042076209A	Sample number(s): 1257116								
Nitrate Nitrogen	0.750	0.750			100		90-110		
Sulfate	7.50	7.85			105		90-110		
Batch number: 20044135209B	Sample number(s): 1257112-1257115								
Sulfate	7.50	7.94			106		90-110		
Batch number: 20050304502B	Sample number(s): 1257112-1257116								
Total Organic Carbon	25	24.29			97		91-113		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20044133301A	Sample number(s): 1257116								
Sulfide	20	18.33	20	18.33	92	92	80-120	0	5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/21/2020 20:57

Group Number: 2087203

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: I200491AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1257114	103	101	94	95
1257114DL	102	101	93	93
1257115	101	99	94	93
1257116	101	95	94	95
1257119	101	101	94	94
1257119DL	102	100	94	95
1257120	103	103	93	92
Blank	104	96	93	93
LCS	104	95	93	96
LCSD	101	100	94	95
Limits:	80-120	80-120	80-120	80-120

Analysis Name: 8260C Boeing 38
Batch number: I200501AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1257112	99	101	94	93
1257112DL	100	95	94	93
1257113	98	98	96	95
1257113DL	97	95	97	94
1257115DL	98	97	96	94
Blank	100	102	95	92
LCS	98	103	95	94
LCSD	99	95	96	94
Limits:	80-120	80-120	80-120	80-120

Analysis Name: 8260C Boeing 38
Batch number: I200511AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1257113DL2	100	92	94	93
1257113DLRE	102	100	94	93
Blank	100	102	95	93
LCS	98	97	96	93
LCSD	99	102	96	94
Limits:	80-120	80-120	80-120	80-120

Analysis Name: AMEE by RSK-175
Batch number: 200440003A

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/21/2020 20:57

Group Number: 2087203

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: AMEE by RSK-175
Batch number: 200440003A

	Propene
1257112	53
1257112DL	102
1257113	653*
1257113DL	105
1257113RE	1801*
1257114	64
1257114DL	96
1257115	60
1257115DL	96
1257116	79
Blank	100
LCS	102
LCSD	98
Limits:	46-135

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 13419 For Eurofins Lancaster Laboratories Environmental use only Group # 208203 Sample # 125712-20
Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Gresham, Oregon
Site Project: Boeing of Portland
Site Program/#: 00251116.120.412
Boeing PM: Debbie Tarye
Consultant Contact: Chris Kimmel
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify):
Sampler: WHL/GJN # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	VOC (38 list)	TOC	Sulfate	Sulfide	Nitrate	AMEE	Total Iron	Dissolved Iron					(5) Remarks/Comments
E-6-0220	2/10	11:25	H_2O	9	X	X	X			X							
E-7-0220	↓	10:33	↓	9	X	X	X			X							
BOP-9i-0220		09:21		9	X	X	X			X							
BOP-10i-0220		12:57		9	X	X	X			X							
BOP-83i-0220		15:15		12	X	X	X	X	X	X	X	X					
BOP-x-0220	↓	13:30	↓	2	X												1 Vial has headspace
Trip Blanks	—	—	H_2O	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 (7)
W. Fanning Lyle	2/10/20 14:45		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time 2/11/20 1007

Relinquished by commercial carrier (circle): UPS FedEx Other:
Temperature upon Receipt: 5.2 °C
Custody Seals Intact?: (Yes) No

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

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

Tests 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.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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. 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. 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.

eurofins | Lancaster Laboratories Environmental

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 9U4-26
Seattle WA 98124-2207

Report Date: February 20, 2020 15:10

Project: Boeing of Portland/0025116.120.412

Account #: 13419
Group Number: 2087205
PO Number: 0025116.120.412
State of Sample Origin: OR

Electronic Copy To	Landau	Attn: Chris Kimmel
Electronic Copy To	Landau Associates	Attn: Dani Jorgensen
Electronic Copy To	Landau	Attn: Erin Waibel
Electronic Copy To	Landau Associates	Attn: Laura Lafferty

Respectfully Submitted,

Kay Hower

(717) 556-7364

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
TowerInf-0220 Water	02/10/2020 13:40	1257124
TowerInf-0220 Total Metals Water	02/10/2020 13:40	1257125
TowerInf-0220 Dissolved Metals Water	02/10/2020 13:40	1257126
TowerInD-0220 Water	02/10/2020 13:50	1257127
TowerEff-0220 Water	02/10/2020 13:45	1257128
TowerEff-0220 Total Metals Water	02/10/2020 13:45	1257129
TowerEff-0220 Dissolved Metals Water	02/10/2020 13:45	1257130
TowerEfD-0220 Water	02/10/2020 13:55	1257131
Trip Blanks Water	02/10/2020	1257132

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Project Name: Boeing of Portland/0025116.120.412
ELLE Group #: 2087205

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

EPA 300.0, Wet Chemistry

Batch #: 20042076209A (Sample number(s): 1257128 UNSPK: 1257128 BKG: 1257128)

The recovery(ies) for the following analyte(s) in the MS were below the acceptance window: Nitrate Nitrogen

Sample Description: **TowerInf-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 13:40

The Boeing Company
ELLE Sample #: WW 1257124
ELLE Group #: 2087205
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**1.3**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.1**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**0.3**		0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**6.2**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**9.8**		5.0	5
	SM 5310 C-2011		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**1.8**		1.0	1
	EPA 376.1		**mg/l**		**mg/l**	
01333	Sulfide	18496-25-8	2.0	U	2.0	1

Sample Description: **TowerInf-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 13:40

The Boeing Company
ELLE Sample #: WW 1257124
ELLE Group #: 2087205
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200501AA	02/19/2020 12:47	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200501AA	02/19/2020 12:46	Jennifer K Howe	1
00228	Sulfate	EPA 300.0	1	20044135209B	02/14/2020 09:06	Kevin Litwa	5
00273	Total Organic Carbon	SM 5310 C-2011	1	20050304502B	02/19/2020 20:46	Bethany Sandone	1
01333	Sulfide	EPA 376.1	1	20044133301A	02/13/2020 09:43	Nicole Munsell	1

Sample Description: **TowerInf-0220 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 13:40

The Boeing Company
ELLE Sample #: WW 1257125
ELLE Group #: 2087205
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**0.546**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200421404403	02/12/2020 22:11	Cindy M Gehman	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200421404403	02/12/2020 03:54	James L Mertz	1

Sample Description: **TowerInf-0220 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 13:40

The Boeing Company
ELLE Sample #: WW 1257126
ELLE Group #: 2087205
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**0.538**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200421486604	02/12/2020 09:00	Patrick J Engle	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200421486604	02/11/2020 21:30	JoElla L Rice	1

Sample Description: **TowerInD-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 13:50

The Boeing Company
ELLE Sample #: WW 1257127
ELLE Group #: 2087205
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**1.3**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.1**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**0.3**		0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**6.1**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200501AA	02/19/2020 13:08	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200501AA	02/19/2020 13:07	Jennifer K Howe	1

Sample Description: **TowerEff-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 13:45

The Boeing Company
ELLE Sample #: WW 1257128
ELLE Group #: 2087205
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	**Acetone**	67-64-1	**5.0**	5.0	1
11996	Benzene	71-43-2	0.2 U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5 U	0.5	1
11996	Bromoform	75-25-2	0.5 U	0.5	1
11996	Bromomethane	74-83-9	0.5 U	0.5	1
11996	2-Butanone	78-93-3	5.0 U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5 U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2 U	0.2	1
11996	Chlorobenzene	108-90-7	0.5 U	0.5	1
11996	Chloroethane	75-00-3	0.5 U	0.5	1
11996	Chloroform	67-66-3	0.2 U	0.2	1
11996	Chloromethane	74-87-3	0.5 U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5 U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5 U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2 U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2 U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2 U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2 U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5 U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2 U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2 U	0.2	1
11996	Ethylbenzene	100-41-4	0.5 U	0.5	1
11996	2-Hexanone	591-78-6	5.0 U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0 U	5.0	1
11996	Methylene Chloride	75-09-2	0.5 U	0.5	1
11996	Styrene	100-42-5	0.5 U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2 U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2 U	0.2	1
11996	Toluene	108-88-3	0.2 U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5 U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5 U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2 U	0.2	1
11996	Trichloroethene	79-01-6	0.2 U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5 U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5 U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2 U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5 U	0.5	1
11996	o-Xylene	95-47-6	0.5 U	0.5	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**1.5**	0.10	1
01506	Nitrite Nitrogen	14797-65-0	0.10 U	0.10	1
00228	**Sulfate**	14808-79-8	**8.4**	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**1.7**	1.0	1
	EPA 376.1		**mg/l**	**mg/l**	

Sample Description: **TowerEff-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 13:45

The Boeing Company
ELLE Sample #: WW 1257128
ELLE Group #: 2087205
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 376.1**		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1
	SM 4500-NH3 D-2011		**mg/l**	**mg/l**	
12677	Ammonia-Nitrogen	7664-41-7	0.24 U	0.24	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200501AA	02/19/2020 13:30	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200501AA	02/19/2020 13:29	Jennifer K Howe	1
00368	Nitrate Nitrogen	EPA 300.0	1	20042076209A	02/12/2020 15:46	Niyati Desai	1
01506	Nitrite Nitrogen	EPA 300.0	1	20042076209A	02/12/2020 15:46	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20042076209A	02/12/2020 15:46	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20050304502B	02/19/2020 20:59	Bethany Sandone	1
01333	Sulfide	EPA 376.1	1	20044133301A	02/13/2020 09:43	Nicole Munsell	1
12677	Ammonia-Nitrogen	SM 4500-NH3 D-2011	1	20045007201A	02/14/2020 18:22	Jeremy L Bolf	1

Sample Description: **TowerEff-0220 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 13:45

The Boeing Company
ELLE Sample #: WW 1257129
ELLE Group #: 2087205
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**0.453**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200421404403	02/12/2020 23:03	Cindy M Gehman	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200421404403	02/12/2020 03:54	James L Mertz	1

Sample Description: **TowerEff-0220 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 13:45

The Boeing Company
ELLE Sample #: WW 1257130
ELLE Group #: 2087205
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**0.316**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200421486603	02/13/2020 09:58	Lisa J Cooke	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200421486603	02/12/2020 06:00	James L Mertz	1

Sample Description: **TowerEfD-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020 13:55

The Boeing Company
ELLE Sample #: WW 1257131
ELLE Group #: 2087205
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**5.1**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200501AA	02/19/2020 13:52	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200501AA	02/19/2020 13:51	Jennifer K Howe	1

Sample Description: **Trip Blanks Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/11/2020 10:07
Collection Date/Time: 02/10/2020

The Boeing Company
ELLE Sample #: WW 1257132
ELLE Group #: 2087205
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200501AA	02/19/2020 11:44	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200501AA	02/19/2020 11:43	Jennifer K Howe	1

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Quality Control Summary

Client Name: The Boeing Company Group Number: 2087205
Reported: 02/20/2020 15:10

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 was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: I200501AA	Sample number(s): 1257124,1257127-1257128,1257131-1257132		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 15:10

Group Number: 2087205

Method Blank (continued)

Analysis Name	Result	LOQ
	mg/l	mg/l
Batch number: 200421404403	Sample number(s): 1257125,1257129	
Iron	0.200 U	0.200
Batch number: 200421486603	Sample number(s): 1257130	
Iron	0.206 U	0.206
Batch number: 200421486604	Sample number(s): 1257126	
Iron	0.206 U	0.206
Batch number: 20042076209A	Sample number(s): 1257128	
Nitrate Nitrogen	0.10 U	0.10
Nitrite Nitrogen	0.10 U	0.10
Sulfate	1.0 U	1.0
Batch number: 20044135209B	Sample number(s): 1257124	
Sulfate	1.0 U	1.0
Batch number: 20050304502B	Sample number(s): 1257124,1257128	
Total Organic Carbon	1.0 U	1.0
Batch number: 20044133301A	Sample number(s): 1257124,1257128	
Sulfide	2.0 U	2.0
Batch number: 20045007201A	Sample number(s): 1257128	
Ammonia-Nitrogen	0.24 U	0.24

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: I200501AA	Sample number(s): 1257124,1257127-1257128,1257131-1257132								
Acetone	37.5	36.49	37.5	36.04	97	96	60-146	1	30
Benzene	5.00	4.83	5.00	4.90	97	98	80-120	1	30
Bromodichloromethane	5.00	5.52	5.00	5.41	110	108	73-124	2	30
Bromoform	5.00	5.38	5.00	5.36	108	107	49-144	0	30
Bromomethane	5.00	4.58	5.00	4.55	92	91	60-136	1	30
2-Butanone	37.5	35.63	37.5	34.78	95	93	59-141	2	30
Carbon Disulfide	5.00	3.94	5.00	3.88	79	78	67-130	2	30
Carbon Tetrachloride	5.00	5.66	5.00	5.52	113	110	64-141	3	30
Chlorobenzene	5.00	4.99	5.00	4.95	100	99	80-120	1	30
Chloroethane	5.00	4.57	5.00	4.70	91	94	63-120	3	30
Chloroform	5.00	5.34	5.00	5.34	107	107	80-120	0	30
Chloromethane	5.00	4.34	5.00	4.30	87	86	56-124	1	30
Dibromochloromethane	5.00	5.36	5.00	5.36	107	107	64-138	0	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 15:10

Group Number: 2087205

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1-Dichloroethane	5.00	4.82	5.00	4.78	96	96	74-120	1	30
1,2-Dichloroethane	5.00	5.71	5.00	5.57	114	111	69-122	2	30
1,1-Dichloroethene	5.00	4.84	5.00	4.63	97	93	80-131	4	30
cis-1,2-Dichloroethene	5.00	5.23	5.00	5.07	105	101	80-122	3	30
trans-1,2-Dichloroethene	5.00	4.73	5.00	4.70	95	94	80-122	1	30
1,2-Dichloropropane	5.00	4.94	5.00	4.96	99	99	80-120	0	30
cis-1,3-Dichloropropene	5.00	4.87	5.00	4.80	97	96	67-121	1	30
trans-1,3-Dichloropropene	5.00	4.88	5.00	4.80	98	96	61-129	2	30
Ethylbenzene	5.00	5.12	5.00	5.05	102	101	80-120	1	30
2-Hexanone	25	25.13	25	24.65	101	99	52-140	2	30
4-Methyl-2-pentanone	25	25.56	25	24.45	102	98	55-140	4	30
Methylene Chloride	5.00	4.75	5.00	4.67	95	93	80-120	2	30
Styrene	5.00	5.20	5.00	5.15	104	103	80-120	1	30
1,1,2,2-Tetrachloroethane	5.00	4.79	5.00	4.82	96	96	75-123	1	30
Tetrachloroethene	5.00	5.26	5.00	5.30	105	106	80-120	1	30
Toluene	5.00	5.00	5.00	5.11	100	102	80-120	2	30
112Trichloro122Trifluoroethane	5.00	4.54	5.00	4.45	91	89	75-133	2	30
1,1,1-Trichloroethane	5.00	5.57	5.00	5.50	111	110	78-126	1	30
1,1,2-Trichloroethane	5.00	5.30	5.00	5.22	106	104	80-120	1	30
Trichloroethene	5.00	5.01	5.00	4.99	100	100	80-120	0	30
Trichlorofluoromethane	5.00	5.91	5.00	5.78	118	116	62-136	2	30
Vinyl Acetate	12.5	13.6	12.5	13.52	109	108	38-145	1	30
Vinyl Chloride	5.00	4.42	5.00	4.35	88	87	60-125	2	30
m+p-Xylene	10	10.29	10	10.13	103	101	80-120	2	30
o-Xylene	5.00	5.03	5.00	4.95	101	99	80-120	2	30
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 200421404403	Sample number(s): 1257125,1257129								
Iron	0.400	0.425			106		80-120		
Batch number: 200421486603	Sample number(s): 1257130								
Iron	0.400	0.397			99		80-120		
Batch number: 200421486604	Sample number(s): 1257126								
Iron	0.400	0.377			94		80-120		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20042076209A	Sample number(s): 1257128								
Nitrate Nitrogen	0.750	0.750			100		90-110		
Nitrite Nitrogen	0.750	0.765			102		90-110		
Sulfate	7.50	7.85			105		90-110		
Batch number: 20044135209B	Sample number(s): 1257124								
Sulfate	7.50	7.94			106		90-110		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 15:10

Group Number: 2087205

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/l	LCS Conc mg/l	LCSD Spike Added mg/l	LCSD Conc mg/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 20050304502B	Sample number(s): 1257124,1257128								
Total Organic Carbon	25	24.29			97		91-113		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 20044133301A	Sample number(s): 1257124,1257128								
Sulfide	20	18.33	20	18.33	92	92	80-120	0	5
Batch number: 20045007201A	Sample number(s): 1257128								
Ammonia-Nitrogen	5.00	5.37			107		82-124		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 200421404403	Sample number(s): 1257125,1257129 UNSPK: 1257125									
Iron	0.546	0.400	1.02	0.400	1.01	118	116	75-125	1	20
Batch number: 200421486604	Sample number(s): 1257126 UNSPK: 1257126									
Iron	0.538	0.418	0.940	0.418	0.943	96	97	75-125	0	20
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 20042076209A	Sample number(s): 1257128 UNSPK: 1257128									
Nitrate Nitrogen	1.51	1.00	2.38			87*		90-110		
Nitrite Nitrogen	0.10 U	1.00	0.994			99		90-110		
Sulfate	8.37	10	18.47			101		90-110		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 200421404403	Sample number(s): 1257125,1257129 BKG: 1257125			
Iron	0.546	0.576	5 (1)	20
Batch number: 200421486604	Sample number(s): 1257126 BKG: 1257126			
Iron	0.538	0.541	0 (1)	20

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 15:10

Group Number: 2087205

Laboratory Duplicate (continued)

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	mg/l	mg/l		
	mg/l	mg/l		
Batch number: 20042076209A	Sample number(s): 1257128 BKG: 1257128			
Nitrate Nitrogen	1.51	1.50	1	15
Nitrite Nitrogen	0.10 U	0.10 U	0 (1)	15
Sulfate	8.37	8.35	0	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: I200501AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1257124	101	100	95	92
1257127	99	98	95	93
1257128	101	100	95	92
1257131	101	95	95	92
1257132	101	102	96	93
Blank	100	102	95	92
LCS	98	103	95	94
LCSD	99	95	96	94
Limits:	80-120	80-120	80-120	80-120

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 13419 For Eurofins Lancaster Laboratories Environmental use only Group # 2087205 Sample # L157124-32
Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Gresham, Oregon
Site Project: Boeing of Portland
Site Program/#: 0025116.120.412
Boeing PM: Debbie Taege; John Rusoff
Consultant Contact: Chris Kimmel
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify):
Sampler: WHL/GJN # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	VOC (38 list)	TOC	Sulfate	Sulfide	Nitrate	Nitrite	Total Iron	Dissolved Iron	ammonia				(4) Analyses Requested
TowerInf-0220	2/10	13:40	H_2O	12	X	X	X	X			X	X					Metals QC collected at Inf
TowerInD-0220	↓	13:50	↓	3	X												
TowerEFF-0220		13:45		11	X	X	X	X	X	X	X	X	X				
TowerEfD-0220	↓	13:55	↓	3	X												
Trip Blanks	—	—	H_2O	2	X												

(5) Remarks/Comments

Metals QC collected at Inf

(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 (7)
W. Peggy Li	2/10/20 14:45		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time 2/11/20 1007

Relinquished by commercial carrier (circle): UPS (FedEx) Other: _____
Temperature upon Receipt: 5.2 °C
Custody Seals Intact?: (Yes) No

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.

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

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

Tests 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.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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. 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. 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.

eurofins | Lancaster Laboratories Environmental

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



REVISED

ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 9U4-26
Seattle WA 98124-2207

Report Date: March 18, 2020 14:40

Project: Boeing of Portland/0025116.120.412

Account #: 13419
Group Number: 2087461
PO Number: 0025116.120.412
State of Sample Origin: OR

Electronic Copy To	Landau	Attn: Chris Kimmel
Electronic Copy To	Landau Associates	Attn: Dani Jorgensen
Electronic Copy To	Landau	Attn: Erin Waibel
Electronic Copy To	Landau Associates	Attn: Laura Lafferty

Respectfully Submitted,

Kay Hower

(717) 556-7364

A previous version of this report was generated on 02/21/2020 14:39.

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



REVISED

SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
BOP-72i-0220 Water	02/11/2020 13:09	1258087
BOP-72i-0220 Total Metals Water	02/11/2020 13:09	1258088
BOP-72i-0220 Dissolved Metals Water	02/11/2020 13:09	1258089
BOP-73i-0220 Water	02/11/2020 13:55	1258090
BOP-73i-0220 Total Metals Water	02/11/2020 13:55	1258091
BOP-73i-0220 Dissolved Metals Water	02/11/2020 13:55	1258092
BOP-75i-0220 Water	02/11/2020 12:26	1258093
BOP-75i-0220 Total Metals Water	02/11/2020 12:26	1258094
BOP-75i-0220 Dissolved Metals Water	02/11/2020 12:26	1258095
BOP-77i-0220 Water	02/11/2020 14:40	1258096
BOP-77i-0220 Total Metals Water	02/11/2020 14:40	1258097
BOP-77i-0220 Dissolved Metals Water	02/11/2020 14:40	1258098
BOP-80i-0220 Water	02/11/2020 11:31	1258099
BOP-80i-0220 Total Metals Water	02/11/2020 11:31	1258100
BOP-80i-0220 Dissolved Metals Water	02/11/2020 11:31	1258101
BOP-81i-0220 Water	02/11/2020 10:42	1258102
BOP-81i-0220 Total Metals Water	02/11/2020 10:42	1258103
BOP-81i-0220 Dissolved Metals Water	02/11/2020 10:42	1258104
BOP-82i-0220 Water	02/11/2020 09:48	1258105
BOP-82i-0220 Total Metals Water	02/11/2020 09:48	1258106
BOP-82i-0220 Dissolved Metals Water	02/11/2020 09:48	1258107
Trip Blanks Water	02/11/2020	1258108

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Project Name: Boeing of Portland/0025116.120.412
ELLE Group #: 2087461

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Preservation requirements were not met.

Sample #s: 1258096, 1258099

Preservation requirements were not met. The pH preservation of all non-volatile containers was checked upon receipt at the laboratory. The container for the following analysis was not within the specification and was adjusted accordingly by the laboratory: Sulfide

Analysis Specific Comments:

SW-846 8260C 25mL purge, GC/MS Volatiles

Sample #s: 1258102

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift continuing calibration verification criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.
The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
chloromethane	-25

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

Sample #s: 1258096

The trial 2 diluted analysis was performed from a vial with headspace outside of holding time.

SW-846 6010C, Metals Dissolved

Batch #: 200431486601 (Sample number(s): 1258089, 1258092, 1258095, 1258098, 1258101, 1258104, 1258107 UNSPK: 1258095 BKG: 1258095)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window:

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Iron

EPA 300.0, Wet Chemistry

Batch #: 20043076115A (Sample number(s): 1258087, 1258090, 1258093, 1258096, 1258099, 1258102, 1258105 UNSPK: 1258102 BKG: 1258102)

The recovery(ies) for the following analyte(s) in the MS exceeded the acceptance window indicating a positive bias: Sulfate

REVISED

Sample Description: **BOP-72i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 13:09

The Boeing Company
ELLE Sample #: WW 1258087
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	**Acetone**	67-64-1	**7.9**	5.0	1
11996	**Benzene**	71-43-2	**0.3**	0.2	1
11996	Bromodichloromethane	75-27-4	0.5 U	0.5	1
11996	Bromoform	75-25-2	0.5 U	0.5	1
11996	Bromomethane	74-83-9	0.5 U	0.5	1
11996	2-Butanone	78-93-3	5.0 U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5 U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2 U	0.2	1
11996	Chlorobenzene	108-90-7	0.5 U	0.5	1
11996	Chloroethane	75-00-3	0.5 U	0.5	1
11996	Chloroform	67-66-3	0.2 U	0.2	1
11996	Chloromethane	74-87-3	0.5 U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5 U	0.5	1
11996	**1,1-Dichloroethane**	75-34-3	**0.9**	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2 U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2 U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**2.3**	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2 U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5 U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2 U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2 U	0.2	1
11996	Ethylbenzene	100-41-4	0.5 U	0.5	1
11996	2-Hexanone	591-78-6	5.0 U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0 U	5.0	1
11996	Methylene Chloride	75-09-2	0.5 U	0.5	1
11996	Styrene	100-42-5	0.5 U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2 U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2 U	0.2	1
11996	**Toluene**	108-88-3	**1.8**	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5 U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5 U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2 U	0.2	1
11996	Trichloroethene	79-01-6	0.2 U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5 U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5 U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**1.1**	0.2	1
11996	m+p-Xylene	179601-23-1	0.5 U	0.5	1
11996	o-Xylene	95-47-6	0.5 U	0.5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**12,000 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	500 U	500	100
07105	Ethane	74-84-0	500 U	500	100

REVISED

Sample Description: **BOP-72i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 13:09

The Boeing Company
ELLE Sample #: WW 1258087
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Ethene	74-85-1	500 U	500	100
07105	**Methane**	74-82-8	**17,000**	500	100
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
00228	Sulfate	14808-79-8	1.0 U	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**13.2**	5.0	5
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200501AA	02/19/2020 14:13	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200501AA	02/19/2020 14:12	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200440003A	02/13/2020 13:22	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200440003A	02/14/2020 21:27	Johanna C Kennedy	100
00368	Nitrate Nitrogen	EPA 300.0	1	20043076115A	02/13/2020 06:08	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20043076115A	02/13/2020 06:08	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20050304503A	02/20/2020 15:34	Bethany Sandone	5
01333	Sulfide	EPA 376.1	1	20044133301A	02/13/2020 09:43	Nicole Munsell	1

REVISED

Sample Description: **BOP-72i-0220 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 13:09

The Boeing Company
ELLE Sample #: WW 1258088
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**52.0**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200431404403	02/13/2020 13:32	Patrick J Engle	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200431404403	02/13/2020 03:26	James L Mertz	1

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Analysis Report

REVISED

Sample Description: **BOP-72i-0220 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 13:09

The Boeing Company
ELLE Sample #: WW 1258089
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**46.1**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200431486601	02/13/2020 11:55	Patrick J Engle	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200431486601	02/13/2020 05:45	James L Mertz	1

REVISED

Sample Description: **BOP-73i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 13:55

The Boeing Company
ELLE Sample #: WW 1258090
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	100	U	100	20
11996	Benzene	71-43-2	4.0	U	4.0	20
11996	Bromodichloromethane	75-27-4	10	U	10	20
11996	Bromoform	75-25-2	10	U	10	20
11996	Bromomethane	74-83-9	10	U	10	20
11996	2-Butanone	78-93-3	100	U	100	20
11996	Carbon Disulfide	75-15-0	10	U	10	20
11996	Carbon Tetrachloride	56-23-5	4.0	U	4.0	20
11996	Chlorobenzene	108-90-7	10	U	10	20
11996	Chloroethane	75-00-3	10	U	10	20
11996	Chloroform	67-66-3	4.0	U	4.0	20
11996	Chloromethane	74-87-3	10	U	10	20
11996	Dibromochloromethane	124-48-1	10	U	10	20
11996	1,1-Dichloroethane	75-34-3	10	U	10	20
11996	1,2-Dichloroethane	107-06-2	4.0	U	4.0	20
11996	1,1-Dichloroethene	75-35-4	4.0	U	4.0	20
11996	**cis-1,2-Dichloroethene**	156-59-2	**760**	**E**	4.0	20
11996	**trans-1,2-Dichloroethene**	156-60-5	**65**		4.0	20
11996	1,2-Dichloropropane	78-87-5	10	U	10	20
11996	cis-1,3-Dichloropropene	10061-01-5	4.0	U	4.0	20
11996	trans-1,3-Dichloropropene	10061-02-6	4.0	U	4.0	20
11996	Ethylbenzene	100-41-4	10	U	10	20
11996	2-Hexanone	591-78-6	100	U	100	20
11996	4-Methyl-2-pentanone	108-10-1	100	U	100	20
11996	Methylene Chloride	75-09-2	10	U	10	20
11996	Styrene	100-42-5	10	U	10	20
11996	1,1,2,2-Tetrachloroethane	79-34-5	4.0	U	4.0	20
11996	Tetrachloroethene	127-18-4	4.0	U	4.0	20
11996	Toluene	108-88-3	4.0	U	4.0	20
11996	112Trichloro122Trifluoroethane	76-13-1	10	U	10	20
11996	1,1,1-Trichloroethane	71-55-6	10	U	10	20
11996	1,1,2-Trichloroethane	79-00-5	4.0	U	4.0	20
11996	**Trichloroethene**	79-01-6	**4.2**		4.0	20
11996	Trichlorofluoromethane	75-69-4	10	U	10	20
11996	Vinyl Acetate	108-05-4	10	U	10	20
11996	**Vinyl Chloride**	75-01-4	**1,600**	**E**	4.0	20
11996	m+p-Xylene	179601-23-1	10	U	10	20
11996	o-Xylene	95-47-6	10	U	10	20
Trial ID: DL						
11996	Acetone	67-64-1	1,000	U	1,000	200
11996	Benzene	71-43-2	40	U	40	200
11996	Bromodichloromethane	75-27-4	100	U	100	200
11996	Bromoform	75-25-2	100	U	100	200
11996	Bromomethane	74-83-9	100	U	100	200
11996	2-Butanone	78-93-3	1,000	U	1,000	200
11996	Carbon Disulfide	75-15-0	100	U	100	200
11996	Carbon Tetrachloride	56-23-5	40	U	40	200
11996	Chlorobenzene	108-90-7	100	U	100	200

REVISED

Sample Description: **BOP-73i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 13:55

The Boeing Company
ELLE Sample #: WW 1258090
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Chloroethane	75-00-3	100 U	100	200
11996	Chloroform	67-66-3	40 U	40	200
11996	Chloromethane	74-87-3	100 U	100	200
11996	Dibromochloromethane	124-48-1	100 U	100	200
11996	1,1-Dichloroethane	75-34-3	100 U	100	200
11996	1,2-Dichloroethane	107-06-2	40 U	40	200
11996	1,1-Dichloroethene	75-35-4	40 U	40	200
11996	**cis-1,2-Dichloroethene**	156-59-2	**780**	40	200
11996	**trans-1,2-Dichloroethene**	156-60-5	**57**	40	200
11996	1,2-Dichloropropane	78-87-5	100 U	100	200
11996	cis-1,3-Dichloropropene	10061-01-5	40 U	40	200
11996	trans-1,3-Dichloropropene	10061-02-6	40 U	40	200
11996	Ethylbenzene	100-41-4	100 U	100	200
11996	2-Hexanone	591-78-6	1,000 U	1,000	200
11996	4-Methyl-2-pentanone	108-10-1	1,000 U	1,000	200
11996	Methylene Chloride	75-09-2	100 U	100	200
11996	Styrene	100-42-5	100 U	100	200
11996	1,1,2,2-Tetrachloroethane	79-34-5	40 U	40	200
11996	Tetrachloroethene	127-18-4	40 U	40	200
11996	Toluene	108-88-3	40 U	40	200
11996	112Trichloro122Trifluoroethane	76-13-1	100 U	100	200
11996	1,1,1-Trichloroethane	71-55-6	100 U	100	200
11996	1,1,2-Trichloroethane	79-00-5	40 U	40	200
11996	Trichloroethene	79-01-6	40 U	40	200
11996	Trichlorofluoromethane	75-69-4	100 U	100	200
11996	Vinyl Acetate	108-05-4	100 U	100	200
11996	**Vinyl Chloride**	75-01-4	**1,700**	40	200
11996	m+p-Xylene	179601-23-1	100 U	100	200
11996	o-Xylene	95-47-6	100 U	100	200
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	**Ethane**	74-84-0	**59**	5.0	1
07105	**Ethene**	74-85-1	**2,100 E**	5.0	1
07105	**Methane**	74-82-8	**12,000 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	500 U	500	100
07105	Ethane	74-84-0	500 U	500	100
07105	**Ethene**	74-85-1	**2,500**	500	100
07105	**Methane**	74-82-8	**16,000**	500	100
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
00228	Sulfate	14808-79-8	1.0 U	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	

REVISED

Sample Description: **BOP-73i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 13:55

The Boeing Company
ELLE Sample #: WW 1258090
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 5310 C-2011**		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**2.9**	1.0	1
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200501AA	02/19/2020 16:21	Jennifer K Howe	20
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	I200501AA	02/19/2020 16:42	Jennifer K Howe	200
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200501AA	02/19/2020 16:20	Jennifer K Howe	20
01163	GC/MS VOA Water Prep	SW-846 5030C	2	I200501AA	02/19/2020 16:41	Jennifer K Howe	200
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200440003A	02/13/2020 14:36	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200440003A	02/14/2020 21:45	Johanna C Kennedy	100
00368	Nitrate Nitrogen	EPA 300.0	1	20043076115A	02/13/2020 05:51	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20043076115A	02/13/2020 05:51	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20050304503A	02/20/2020 15:46	Bethany Sandone	1
01333	Sulfide	EPA 376.1	1	20044133301A	02/13/2020 09:43	Nicole Munsell	1

REVISED

Sample Description: **BOP-73i-0220 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 13:55

The Boeing Company
ELLE Sample #: WW 1258091
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**6.57**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200431404403	02/13/2020 13:36	Patrick J Engle	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200431404403	02/13/2020 03:26	James L Mertz	1

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Analysis Report

REVISED

Sample Description: **BOP-73i-0220 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 13:55

The Boeing Company
ELLE Sample #: WW 1258092
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**3.38**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200431486601	02/13/2020 11:59	Patrick J Engle	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200431486601	02/13/2020 05:45	James L Mertz	1

REVISED

Sample Description: **BOP-75i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 12:26

The Boeing Company
ELLE Sample #: WW 1258093
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	**Acetone**	67-64-1	**9.2**	5.0	1
11996	**Benzene**	71-43-2	**1.8**	0.2	1
11996	Bromodichloromethane	75-27-4	0.5 U	0.5	1
11996	Bromoform	75-25-2	0.5 U	0.5	1
11996	Bromomethane	74-83-9	0.5 U	0.5	1
11996	2-Butanone	78-93-3	5.0 U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5 U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2 U	0.2	1
11996	Chlorobenzene	108-90-7	0.5 U	0.5	1
11996	Chloroethane	75-00-3	0.5 U	0.5	1
11996	Chloroform	67-66-3	0.2 U	0.2	1
11996	Chloromethane	74-87-3	0.5 U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5 U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5 U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2 U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2 U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.6**	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2 U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5 U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2 U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2 U	0.2	1
11996	Ethylbenzene	100-41-4	0.5 U	0.5	1
11996	2-Hexanone	591-78-6	5.0 U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0 U	5.0	1
11996	Methylene Chloride	75-09-2	0.5 U	0.5	1
11996	Styrene	100-42-5	0.5 U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2 U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2 U	0.2	1
11996	**Toluene**	108-88-3	**0.6**	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5 U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5 U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2 U	0.2	1
11996	Trichloroethene	79-01-6	0.2 U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5 U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5 U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.6**	0.2	1
11996	m+p-Xylene	179601-23-1	0.5 U	0.5	1
11996	o-Xylene	95-47-6	0.5 U	0.5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**17,000 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	500 U	500	100
07105	Ethane	74-84-0	500 U	500	100

REVISED

Sample Description: **BOP-75i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 12:26

The Boeing Company
ELLE Sample #: WW 1258093
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Ethene	74-85-1	500 U	500	100
07105	**Methane**	74-82-8	**21,000**	500	100
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
00228	**Sulfate**	14808-79-8	**1.1**	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**63.6**	25.0	25
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200501AA	02/19/2020 17:04	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200501AA	02/19/2020 17:03	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200440003A	02/13/2020 14:54	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200440003A	02/14/2020 22:03	Johanna C Kennedy	100
00368	Nitrate Nitrogen	EPA 300.0	1	20043076115A	02/13/2020 05:34	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20043076115A	02/13/2020 05:34	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20050304503A	02/20/2020 15:59	Bethany Sandone	25
01333	Sulfide	EPA 376.1	1	20044133301A	02/13/2020 09:43	Nicole Munsell	1

REVISED

Sample Description: **BOP-75i-0220 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 12:26

The Boeing Company
ELLE Sample #: WW 1258094
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**35.9**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200431404403	02/13/2020 13:39	Patrick J Engle	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200431404403	02/13/2020 03:26	James L Mertz	1

REVISED

Sample Description: **BOP-75i-0220 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 12:26

The Boeing Company
ELLE Sample #: WW 1258095
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**31.1**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200431486601	02/13/2020 11:14	Patrick J Engle	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200431486601	02/13/2020 05:45	James L Mertz	1

REVISED

Sample Description: **BOP-77i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 14:40

The Boeing Company
ELLE Sample #: WW 1258096
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**53**		5.0	1
11996	**Benzene**	71-43-2	**1**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**58**		5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**6.5**		0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**1**		0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	**2-Hexanone**	591-78-6	**6.5**		5.0	1
11996	**4-Methyl-2-pentanone**	108-10-1	**5.2**		5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**140**	**E**	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.5**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**3.2**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	**Acetone**	67-64-1	**55**		50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**66**		50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10

REVISED

Sample Description: **BOP-77i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 14:40

The Boeing Company
ELLE Sample #: WW 1258096
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	**cis-1,2-Dichloroethene**	156-59-2	**6.7**		2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	**Toluene**	108-88-3	**170**		2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	**Vinyl Chloride**	75-01-4	**2.9**		2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

The trial 2 diluted analysis was performed from a vial with headspace outside of holding time.

GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	Ethane	74-84-0	5.0	U	5.0	1
07105	**Ethene**	74-85-1	**8.5**		5.0	1
07105	**Methane**	74-82-8	**16,000**	**E**	5.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	500	U	500	100
07105	Ethane	74-84-0	500	U	500	100
07105	Ethene	74-85-1	500	U	500	100
07105	**Methane**	74-82-8	**22,000**		500	100
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**0.22**		0.10	1

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Analysis Report

REVISED

Sample Description: **BOP-77i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 14:40

The Boeing Company
ELLE Sample #: WW 1258096
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00228	**Sulfate**	14808-79-8	**2.1**	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**703**	500	500
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Sample Comments

Preservation requirements were not met. The pH preservation of all non-volatile containers was checked upon receipt at the laboratory. The container for the following analysis was not within the specification and was adjusted accordingly by the laboratory: Sulfide

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200501AA	02/19/2020 14:34	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	H200772AA	03/17/2020 17:04	Jason M Long	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200501AA	02/19/2020 14:33	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H200772AA	03/17/2020 17:03	Jason M Long	10
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200440003A	02/13/2020 15:12	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200440003A	02/14/2020 22:21	Johanna C Kennedy	100
00368	Nitrate Nitrogen	EPA 300.0	1	20043076115A	02/13/2020 05:17	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20043076115A	02/13/2020 05:17	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20050304503A	02/20/2020 16:12	Bethany Sandone	500
01333	Sulfide	EPA 376.1	1	20044133301A	02/13/2020 09:43	Nicole Munsell	1

REVISED

Sample Description: **BOP-77i-0220 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 14:40

The Boeing Company
ELLE Sample #: WW 1258097
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**50.3**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200431404403	02/13/2020 13:42	Patrick J Engle	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200431404403	02/13/2020 03:26	James L Mertz	1

REVISED

Sample Description: **BOP-77i-0220 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 14:40

The Boeing Company
ELLE Sample #: WW 1258098
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**50.0**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200431486601	02/13/2020 12:02	Patrick J Engle	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200431486601	02/13/2020 05:45	James L Mertz	1

REVISED

Sample Description: **BOP-80i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 11:31

The Boeing Company
ELLE Sample #: WW 1258099
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	**Acetone**	67-64-1	**16**	5.0	1
11996	Benzene	71-43-2	0.2 U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5 U	0.5	1
11996	Bromoform	75-25-2	0.5 U	0.5	1
11996	Bromomethane	74-83-9	0.5 U	0.5	1
11996	2-Butanone	78-93-3	5.0 U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5 U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2 U	0.2	1
11996	Chlorobenzene	108-90-7	0.5 U	0.5	1
11996	Chloroethane	75-00-3	0.5 U	0.5	1
11996	Chloroform	67-66-3	0.2 U	0.2	1
11996	Chloromethane	74-87-3	0.5 U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5 U	0.5	1
11996	**1,1-Dichloroethane**	75-34-3	**0.6**	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2 U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2 U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2 U	0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**0.3**	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5 U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2 U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2 U	0.2	1
11996	Ethylbenzene	100-41-4	0.5 U	0.5	1
11996	2-Hexanone	591-78-6	5.0 U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0 U	5.0	1
11996	Methylene Chloride	75-09-2	0.5 U	0.5	1
11996	Styrene	100-42-5	0.5 U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2 U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2 U	0.2	1
11996	Toluene	108-88-3	0.2 U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5 U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5 U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2 U	0.2	1
11996	Trichloroethene	79-01-6	0.2 U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5 U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5 U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2 U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5 U	0.5	1
11996	o-Xylene	95-47-6	0.5 U	0.5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	**Ethane**	74-84-0	**14**	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**13,000 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	500 U	500	100
07105	Ethane	74-84-0	500 U	500	100

REVISED

Sample Description: **BOP-80i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 11:31

The Boeing Company
ELLE Sample #: WW 1258099
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Ethene	74-85-1	500 U	500	100
07105	**Methane**	74-82-8	**18,000**	500	100
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
00228	Sulfate	14808-79-8	1.0 U	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**5.1**	2.0	2
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Sample Comments

Preservation requirements were not met. The pH preservation of all non-volatile containers was checked upon receipt at the laboratory. The container for the following analysis was not within the specification and was adjusted accordingly by the laboratory: Sulfide

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200501AA	02/19/2020 17:25	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200501AA	02/19/2020 17:24	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200440003A	02/13/2020 15:31	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200440003A	02/14/2020 22:39	Johanna C Kennedy	100
00368	Nitrate Nitrogen	EPA 300.0	1	20043076115A	02/13/2020 05:00	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20043076115A	02/13/2020 05:00	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20050304503A	02/20/2020 16:38	Bethany Sandone	2
01333	Sulfide	EPA 376.1	1	20044133301A	02/13/2020 09:43	Nicole Munsell	1

REVISED

Sample Description: **BOP-80i-0220 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 11:31

The Boeing Company
ELLE Sample #: WW 1258100
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**82.5**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200431404403	02/13/2020 13:46	Patrick J Engle	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200431404403	02/13/2020 03:26	James L Mertz	1

REVISED

Sample Description: **BOP-80i-0220 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 11:31

The Boeing Company
ELLE Sample #: WW 1258101
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**13.8**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200431486601	02/13/2020 12:05	Patrick J Engle	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200431486601	02/13/2020 05:45	James L Mertz	1

REVISED

Sample Description: **BOP-81i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 10:42

The Boeing Company
ELLE Sample #: WW 1258102
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**13**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift continuing calibration verification criteria. The Analyte(s) exceeding 20% Drift is not detected in this sample.
The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
chloromethane	-25

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated

REVISED

Sample Description: **BOP-81i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 10:42

The Boeing Company
ELLE Sample #: WW 1258102
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
	with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.				
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**17,000 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	500 U	500	100
07105	Ethane	74-84-0	500 U	500	100
07105	Ethene	74-85-1	500 U	500	100
07105	**Methane**	74-82-8	**20,000**	500	100
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
00228	Sulfate	14808-79-8	1.0 U	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**4.1**	2.0	2
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200511AA	02/20/2020 18:41	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200511AA	02/20/2020 18:40	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200440003A	02/13/2020 15:49	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200440003A	02/14/2020 22:57	Johanna C Kennedy	100
00368	Nitrate Nitrogen	EPA 300.0	1	20043076115A	02/13/2020 03:17	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20043076115A	02/13/2020 03:17	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20050304503B	02/20/2020 16:51	Bethany Sandone	2
01333	Sulfide	EPA 376.1	1	20044133301A	02/13/2020 09:43	Nicole Munsell	1

REVISED

Sample Description: **BOP-81i-0220 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 10:42

The Boeing Company
ELLE Sample #: WW 1258103
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**71.2**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200431404403	02/13/2020 13:49	Patrick J Engle	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200431404403	02/13/2020 03:26	James L Mertz	1

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Analysis Report

REVISED

Sample Description: **BOP-81i-0220 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 10:42

The Boeing Company
ELLE Sample #: WW 1258104
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**9.29**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200431486601	02/13/2020 12:08	Patrick J Engle	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200431486601	02/13/2020 05:45	James L Mertz	1

REVISED

Sample Description: **BOP-82i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 09:48

The Boeing Company
ELLE Sample #: WW 1258105
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**27**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**1.1**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.6**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**0.3**		0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**3.4**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	**Ethane**	74-84-0	**5.3**		5.0	1
07105	Ethene	74-85-1	5.0	U	5.0	1
07105	**Methane**	74-82-8	**950**	**E**	5.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	25	U	25	5
07105	Ethane	74-84-0	25	U	25	5

REVISED

Sample Description: **BOP-82i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 09:48

The Boeing Company
ELLE Sample #: WW 1258105
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Ethene	74-85-1	25 U	25	5
07105	**Methane**	74-82-8	**990**	25	5
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**0.18**	0.10	1
00228	**Sulfate**	14808-79-8	**7.8**	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**3.4**	1.0	1
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I200501AA	02/19/2020 15:18	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I200501AA	02/19/2020 15:17	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200440003A	02/13/2020 16:08	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200440003A	02/14/2020 23:15	Johanna C Kennedy	5
00368	Nitrate Nitrogen	EPA 300.0	1	20043076115A	02/13/2020 04:08	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20043076115A	02/13/2020 04:08	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20050304503B	02/20/2020 17:04	Bethany Sandone	1
01333	Sulfide	EPA 376.1	1	20044133301A	02/13/2020 09:43	Nicole Munsell	1

REVISED

Sample Description: **BOP-82i-0220 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 09:48

The Boeing Company
ELLE Sample #: WW 1258106
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**15.5**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200431404403	02/13/2020 13:53	Patrick J Engle	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200431404403	02/13/2020 03:26	James L Mertz	1

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Analysis Report

REVISED

Sample Description: **BOP-82i-0220 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020 09:48

The Boeing Company
ELLE Sample #: WW 1258107
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**0.863**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200431486601	02/13/2020 12:12	Patrick J Engle	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200431486601	02/13/2020 05:45	James L Mertz	1

REVISED

Sample Description: **Trip Blanks Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/12/2020 10:13
Collection Date/Time: 02/11/2020

The Boeing Company
ELLE Sample #: WW 1258108
ELLE Group #: 2087461
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	C200502AA	02/19/2020 14:00	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	C200502AA	02/19/2020 13:59	Jennifer K Howe	1

REVISED

Quality Control Summary

Client Name: The Boeing Company
Group Number: 2087461
Reported: 03/18/2020 14:40

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 was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: C200502AA	Sample number(s): 1258108		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

REVISED

Quality Control Summary

Client Name: The Boeing Company
Reported: 03/18/2020 14:40

Group Number: 2087461

Method Blank (continued)

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: H200772AA	Sample number(s): 1258096		
Acetone	5.0	U	5.0
Benzene	0.5	U	0.5
Bromodichloromethane	0.5	U	0.5
Bromoform	1.0	U	1.0
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	1.0	U	1.0
Carbon Tetrachloride	0.5	U	0.5
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.5	U	0.5
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.5	U	0.5
1,1-Dichloroethene	0.5	U	0.5
cis-1,2-Dichloroethene	0.5	U	0.5
trans-1,2-Dichloroethene	0.5	U	0.5
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.5	U	0.5
trans-1,3-Dichloropropene	0.5	U	0.5
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.5	U	0.5
Tetrachloroethene	0.5	U	0.5
Toluene	0.5	U	0.5
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.5	U	0.5
Trichloroethene	0.5	U	0.5
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.5	U	0.5
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5
Batch number: I200501AA	Sample number(s): 1258087,1258090,1258093,1258096,1258099,1258105		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

REVISED

Quality Control Summary

Client Name: The Boeing Company
Reported: 03/18/2020 14:40

Group Number: 2087461

Method Blank (continued)

Analysis Name	Result		LOQ
	ug/l		ug/l
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5
Batch number: I200511AA	Sample number(s): 1258102		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

REVISED

Quality Control Summary

Client Name: The Boeing Company
Reported: 03/18/2020 14:40

Group Number: 2087461

Method Blank (continued)

Analysis Name	Result	LOQ
	ug/l	ug/l
Chloroethane	0.5 U	0.5
Chloroform	0.2 U	0.2
Chloromethane	0.5 U	0.5
Dibromochloromethane	0.5 U	0.5
1,1-Dichloroethane	0.5 U	0.5
1,2-Dichloroethane	0.2 U	0.2
1,1-Dichloroethene	0.2 U	0.2
cis-1,2-Dichloroethene	0.2 U	0.2
trans-1,2-Dichloroethene	0.2 U	0.2
1,2-Dichloropropane	0.5 U	0.5
cis-1,3-Dichloropropene	0.2 U	0.2
trans-1,3-Dichloropropene	0.2 U	0.2
Ethylbenzene	0.5 U	0.5
2-Hexanone	5.0 U	5.0
4-Methyl-2-pentanone	5.0 U	5.0
Methylene Chloride	0.5 U	0.5
Styrene	0.5 U	0.5
1,1,2,2-Tetrachloroethane	0.2 U	0.2
Tetrachloroethene	0.2 U	0.2
Toluene	0.2 U	0.2
112Trichloro122Trifluoroethane	0.5 U	0.5
1,1,1-Trichloroethane	0.5 U	0.5
1,1,2-Trichloroethane	0.2 U	0.2
Trichloroethene	0.2 U	0.2
Trichlorofluoromethane	0.5 U	0.5
Vinyl Acetate	0.5 U	0.5
Vinyl Chloride	0.2 U	0.2
m+p-Xylene	0.5 U	0.5
o-Xylene	0.5 U	0.5
Batch number: 200440003A	Sample number(s): 1258087,1258090,1258093,1258096,1258099,1258102,1258105	
Acetylene	5.0 U	5.0
Ethane	5.0 U	5.0
Ethene	5.0 U	5.0
Methane	5.0 U	5.0
	mg/l	mg/l
Batch number: 200431404403	Sample number(s): 1258088,1258091,1258094,1258097,1258100,1258103,1258106	
Iron	0.200 U	0.200
Batch number: 200431486601	Sample number(s): 1258089,1258092,1258095,1258098,1258101,1258104,1258107	
Iron	0.206 U	0.206
Batch number: 20043076115A	Sample number(s): 1258087,1258090,1258093,1258096,1258099,1258102,1258105	
Nitrate Nitrogen	0.10 U	0.10
Sulfate	1.0 U	1.0

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

REVISED

Quality Control Summary

Client Name: The Boeing Company
Reported: 03/18/2020 14:40

Group Number: 2087461

Method Blank (continued)

Analysis Name	Result mg/l		LOQ mg/l
Batch number: 20050304503A	Sample number(s): 1258087,1258090,1258093,1258096,1258099		
Total Organic Carbon	1.0	U	1.0
Batch number: 20050304503B	Sample number(s): 1258102,1258105		
Total Organic Carbon	1.0	U	1.0
Batch number: 20044133301A	Sample number(s): 1258087,1258090,1258093,1258096,1258099,1258102,1258105		
Sulfide	2.0	U	2.0

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: C200502AA	Sample number(s): 1258108								
Acetone	37.5	40.1	37.5	42.34	107	113	60-146	5	30
Benzene	5.00	4.93	5.00	4.96	99	99	80-120	1	30
Bromodichloromethane	5.00	5.07	5.00	5.09	101	102	73-124	0	30
Bromoform	5.00	4.94	5.00	4.88	99	98	49-144	1	30
Bromomethane	5.00	4.97	5.00	4.96	99	99	60-136	0	30
2-Butanone	37.5	36.98	37.5	39.67	99	106	59-141	7	30
Carbon Disulfide	5.00	4.36	5.00	4.39	87	88	67-130	1	30
Carbon Tetrachloride	5.00	5.20	5.00	5.15	104	103	64-141	1	30
Chlorobenzene	5.00	5.03	5.00	5.08	101	102	80-120	1	30
Chloroethane	5.00	4.99	5.00	5.04	100	101	63-120	1	30
Chloroform	5.00	5.13	5.00	5.17	103	103	80-120	1	30
Chloromethane	5.00	4.94	5.00	4.91	99	98	56-124	1	30
Dibromochloromethane	5.00	5.08	5.00	5.12	102	102	64-138	1	30
1,1-Dichloroethane	5.00	4.97	5.00	4.95	99	99	74-120	0	30
1,2-Dichloroethane	5.00	5.09	5.00	5.15	102	103	69-122	1	30
1,1-Dichloroethene	5.00	4.58	5.00	4.63	92	93	80-131	1	30
cis-1,2-Dichloroethene	5.00	5.13	5.00	5.20	103	104	80-122	1	30
trans-1,2-Dichloroethene	5.00	4.69	5.00	4.77	94	95	80-122	2	30
1,2-Dichloropropane	5.00	5.13	5.00	5.19	103	104	80-120	1	30
cis-1,3-Dichloropropene	5.00	4.85	5.00	4.84	97	97	67-121	0	30
trans-1,3-Dichloropropene	5.00	4.66	5.00	4.60	93	92	61-129	1	30
Ethylbenzene	5.00	4.99	5.00	5.01	100	100	80-120	0	30
2-Hexanone	25	24.12	25	26.22	96	105	52-140	8	30
4-Methyl-2-pentanone	25	24.46	25	25.83	98	103	55-140	5	30
Methylene Chloride	5.00	4.84	5.00	4.95	97	99	80-120	2	30
Styrene	5.00	4.94	5.00	5.01	99	100	80-120	1	30
1,1,2,2-Tetrachloroethane	5.00	4.93	5.00	4.94	99	99	75-123	0	30
Tetrachloroethene	5.00	5.15	5.00	5.15	103	103	80-120	0	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

REVISED

Quality Control Summary

Client Name: The Boeing Company
Reported: 03/18/2020 14:40

Group Number: 2087461

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Toluene	5.00	4.95	5.00	4.98	99	100	80-120	1	30
112Trichloro122Trifluoroethane	5.00	4.98	5.00	4.97	100	99	75-133	0	30
1,1,1-Trichloroethane	5.00	4.92	5.00	4.95	98	99	78-126	1	30
1,1,2-Trichloroethane	5.00	5.19	5.00	5.19	104	104	80-120	0	30
Trichloroethene	5.00	5.04	5.00	5.06	101	101	80-120	0	30
Trichlorofluoromethane	5.00	6.06	5.00	6.05	121	121	62-136	0	30
Vinyl Acetate	12.5	12.33	12.5	12.05	99	96	38-145	2	30
Vinyl Chloride	5.00	5.00	5.00	4.99	100	100	60-125	0	30
m+p-Xylene	10	10.08	10	10.15	101	102	80-120	1	30
o-Xylene	5.00	5.01	5.00	4.97	100	99	80-120	1	30
Batch number: H200772AA	Sample number(s): 1258096								
Acetone	37.5	28.53	37.5	32.37	76	86	60-146	13	30
Benzene	5.00	4.82	5.00	4.92	96	98	80-120	2	30
Bromodichloromethane	5.00	4.77	5.00	4.87	95	97	73-124	2	30
Bromoform	5.00	4.62	5.00	4.72	92	94	49-144	2	30
Bromomethane	5.00	4.30	5.00	4.35	86	87	60-136	1	30
2-Butanone	37.5	37.25	37.5	38.98	99	104	59-141	5	30
Carbon Disulfide	5.00	4.21	5.00	4.34	84	87	67-130	3	30
Carbon Tetrachloride	5.00	4.54	5.00	4.54	91	91	64-141	0	30
Chlorobenzene	5.00	4.93	5.00	4.99	99	100	80-120	1	30
Chloroethane	5.00	4.41	5.00	4.46	88	89	63-120	1	30
Chloroform	5.00	4.77	5.00	4.86	95	97	80-120	2	30
Chloromethane	5.00	4.40	5.00	4.41	88	88	56-124	0	30
Dibromochloromethane	5.00	4.97	5.00	5.07	99	101	64-138	2	30
1,1-Dichloroethane	5.00	4.87	5.00	5.04	97	101	74-120	3	30
1,2-Dichloroethane	5.00	4.71	5.00	4.71	94	94	69-122	0	30
1,1-Dichloroethene	5.00	4.56	5.00	4.63	91	93	80-131	2	30
cis-1,2-Dichloroethene	5.00	4.91	5.00	5.11	98	102	80-122	4	30
trans-1,2-Dichloroethene	5.00	4.54	5.00	4.63	91	93	80-122	2	30
1,2-Dichloropropane	5.00	5.19	5.00	5.36	104	107	80-120	3	30
cis-1,3-Dichloropropene	5.00	4.83	5.00	4.95	97	99	67-121	3	30
trans-1,3-Dichloropropene	5.00	4.65	5.00	4.87	93	97	61-129	5	30
Ethylbenzene	5.00	4.66	5.00	4.80	93	96	80-120	3	30
2-Hexanone	25	25.12	25	25.86	100	103	52-140	3	30
4-Methyl-2-pentanone	25	24.28	25	24.92	97	100	55-140	3	30
Methylene Chloride	5.00	4.81	5.00	4.89	96	98	80-120	2	30
Styrene	5.00	4.83	5.00	5.00	97	100	80-120	4	30
1,1,2,2-Tetrachloroethane	5.00	5.06	5.00	5.14	101	103	75-123	2	30
Tetrachloroethene	5.00	4.81	5.00	4.96	96	99	80-120	3	30
Toluene	5.00	4.88	5.00	4.98	98	100	80-120	2	30
112Trichloro122Trifluoroethane	5.00	4.72	5.00	4.86	94	97	75-133	3	30
1,1,1-Trichloroethane	5.00	4.35	5.00	4.46	87	89	78-126	3	30
1,1,2-Trichloroethane	5.00	5.15	5.00	5.25	103	105	80-120	2	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

REVISED

Quality Control Summary

Client Name: The Boeing Company
Reported: 03/18/2020 14:40

Group Number: 2087461

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Trichloroethene	5.00	4.73	5.00	4.82	95	96	80-120	2	30
Trichlorofluoromethane	5.00	4.88	5.00	4.85	98	97	62-136	1	30
Vinyl Acetate	12.5	12.56	12.5	12.54	100	100	38-145	0	30
Vinyl Chloride	5.00	4.40	5.00	4.47	88	89	60-125	2	30
m+p-Xylene	10	9.63	10	9.89	96	99	80-120	3	30
o-Xylene	5.00	4.70	5.00	4.88	94	98	80-120	4	30
Batch number: I200501AA	Sample number(s): 1258087,1258090,1258093,1258096,1258099,1258105								
Acetone	37.5	36.49	37.5	36.04	97	96	60-146	1	30
Benzene	5.00	4.83	5.00	4.90	97	98	80-120	1	30
Bromodichloromethane	5.00	5.52	5.00	5.41	110	108	73-124	2	30
Bromoform	5.00	5.38	5.00	5.36	108	107	49-144	0	30
Bromomethane	5.00	4.58	5.00	4.55	92	91	60-136	1	30
2-Butanone	37.5	35.63	37.5	34.78	95	93	59-141	2	30
Carbon Disulfide	5.00	3.94	5.00	3.88	79	78	67-130	2	30
Carbon Tetrachloride	5.00	5.66	5.00	5.52	113	110	64-141	3	30
Chlorobenzene	5.00	4.99	5.00	4.95	100	99	80-120	1	30
Chloroethane	5.00	4.57	5.00	4.70	91	94	63-120	3	30
Chloroform	5.00	5.34	5.00	5.34	107	107	80-120	0	30
Chloromethane	5.00	4.34	5.00	4.30	87	86	56-124	1	30
Dibromochloromethane	5.00	5.36	5.00	5.36	107	107	64-138	0	30
1,1-Dichloroethane	5.00	4.82	5.00	4.78	96	96	74-120	1	30
1,2-Dichloroethane	5.00	5.71	5.00	5.57	114	111	69-122	2	30
1,1-Dichloroethene	5.00	4.84	5.00	4.63	97	93	80-131	4	30
cis-1,2-Dichloroethene	5.00	5.23	5.00	5.07	105	101	80-122	3	30
trans-1,2-Dichloroethene	5.00	4.73	5.00	4.70	95	94	80-122	1	30
1,2-Dichloropropane	5.00	4.94	5.00	4.96	99	99	80-120	0	30
cis-1,3-Dichloropropene	5.00	4.87	5.00	4.80	97	96	67-121	1	30
trans-1,3-Dichloropropene	5.00	4.88	5.00	4.80	98	96	61-129	2	30
Ethylbenzene	5.00	5.12	5.00	5.05	102	101	80-120	1	30
2-Hexanone	25	25.13	25	24.65	101	99	52-140	2	30
4-Methyl-2-pentanone	25	25.56	25	24.45	102	98	55-140	4	30
Methylene Chloride	5.00	4.75	5.00	4.67	95	93	80-120	2	30
Styrene	5.00	5.20	5.00	5.15	104	103	80-120	1	30
1,1,2,2-Tetrachloroethane	5.00	4.79	5.00	4.82	96	96	75-123	1	30
Tetrachloroethene	5.00	5.26	5.00	5.30	105	106	80-120	1	30
Toluene	5.00	5.00	5.00	5.11	100	102	80-120	2	30
112Trichloro122Trifluoroethane	5.00	4.54	5.00	4.45	91	89	75-133	2	30
1,1,1-Trichloroethane	5.00	5.57	5.00	5.50	111	110	78-126	1	30
1,1,2-Trichloroethane	5.00	5.30	5.00	5.22	106	104	80-120	1	30
Trichloroethene	5.00	5.01	5.00	4.99	100	100	80-120	0	30
Trichlorofluoromethane	5.00	5.91	5.00	5.78	118	116	62-136	2	30
Vinyl Acetate	12.5	13.6	12.5	13.52	109	108	38-145	1	30
Vinyl Chloride	5.00	4.42	5.00	4.35	88	87	60-125	2	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

REVISED

Quality Control Summary

Client Name: The Boeing Company
Reported: 03/18/2020 14:40

Group Number: 2087461

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
m+p-Xylene	10	10.29	10	10.13	103	101	80-120	2	30
o-Xylene	5.00	5.03	5.00	4.95	101	99	80-120	2	30
Batch number: I200511AA	Sample number(s): 1258102								
Acetone	37.5	37.71	37.5	38.57	101	103	60-146	2	30
Benzene	5.00	5.07	5.00	5.12	101	102	80-120	1	30
Bromodichloromethane	5.00	5.63	5.00	5.61	113	112	73-124	0	30
Bromoform	5.00	5.53	5.00	5.59	111	112	49-144	1	30
Bromomethane	5.00	4.73	5.00	4.75	95	95	60-136	0	30
2-Butanone	37.5	36.99	37.5	38.75	99	103	59-141	5	30
Carbon Disulfide	5.00	4.12	5.00	4.12	82	82	67-130	0	30
Carbon Tetrachloride	5.00	5.90	5.00	6.04	118	121	64-141	2	30
Chlorobenzene	5.00	5.24	5.00	5.29	105	106	80-120	1	30
Chloroethane	5.00	4.75	5.00	4.80	95	96	63-120	1	30
Chloroform	5.00	5.54	5.00	5.59	111	112	80-120	1	30
Chloromethane	5.00	4.33	5.00	4.39	87	88	56-124	2	30
Dibromochloromethane	5.00	5.61	5.00	5.66	112	113	64-138	1	30
1,1-Dichloroethane	5.00	5.04	5.00	5.00	101	100	74-120	1	30
1,2-Dichloroethane	5.00	5.96	5.00	6.02	119	120	69-122	1	30
1,1-Dichloroethene	5.00	4.88	5.00	4.96	98	99	80-131	2	30
cis-1,2-Dichloroethene	5.00	5.31	5.00	5.35	106	107	80-122	1	30
trans-1,2-Dichloroethene	5.00	4.93	5.00	5.08	99	102	80-122	3	30
1,2-Dichloropropane	5.00	5.10	5.00	5.18	102	104	80-120	2	30
cis-1,3-Dichloropropene	5.00	5.07	5.00	5.13	101	103	67-121	1	30
trans-1,3-Dichloropropene	5.00	5.18	5.00	5.22	104	104	61-129	1	30
Ethylbenzene	5.00	5.35	5.00	5.32	107	106	80-120	0	30
2-Hexanone	25	25.88	25	26.71	104	107	52-140	3	30
4-Methyl-2-pentanone	25	26.79	25	27.05	107	108	55-140	1	30
Methylene Chloride	5.00	4.91	5.00	4.94	98	99	80-120	1	30
Styrene	5.00	5.40	5.00	5.40	108	108	80-120	0	30
1,1,2,2-Tetrachloroethane	5.00	5.08	5.00	5.17	102	103	75-123	2	30
Tetrachloroethene	5.00	5.59	5.00	5.61	112	112	80-120	0	30
Toluene	5.00	5.26	5.00	5.37	105	107	80-120	2	30
112Trichloro122Trifluoroethane	5.00	4.96	5.00	5.01	99	100	75-133	1	30
1,1,1-Trichloroethane	5.00	5.75	5.00	5.84	115	117	78-126	2	30
1,1,2-Trichloroethane	5.00	5.47	5.00	5.53	109	111	80-120	1	30
Trichloroethene	5.00	5.22	5.00	5.26	104	105	80-120	1	30
Trichlorofluoromethane	5.00	6.18	5.00	6.23	124	125	62-136	1	30
Vinyl Acetate	12.5	13.55	12.5	13.57	108	109	38-145	0	30
Vinyl Chloride	5.00	4.62	5.00	4.62	92	92	60-125	0	30
m+p-Xylene	10	10.66	10	10.6	107	106	80-120	1	30
o-Xylene	5.00	5.31	5.00	5.27	106	105	80-120	1	30
	ug/l	ug/l	ug/l	ug/l					

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

REVISED

Quality Control Summary

Client Name: The Boeing Company
Reported: 03/18/2020 14:40

Group Number: 2087461

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 200440003A	Sample number(s): 1258087,1258090,1258093,1258096,1258099,1258102,1258105								
Acetylene	51.25	53.32	51.25	49.69	104	97	57-146	7	20
Ethane	59.39	61.74	59.39	60.18	104	101	85-115	3	20
Ethene	60.4	62.44	60.4	60.86	103	101	83-115	3	20
Methane	59.42	62.64	59.42	61.08	105	103	85-115	3	20
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 200431404403	Sample number(s): 1258088,1258091,1258094,1258097,1258100,1258103,1258106								
Iron	0.400	0.461			115		80-120		
Batch number: 200431486601	Sample number(s): 1258089,1258092,1258095,1258098,1258101,1258104,1258107								
Iron	0.400	0.423			106		80-120		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20043076115A	Sample number(s): 1258087,1258090,1258093,1258096,1258099,1258102,1258105								
Nitrate Nitrogen	0.750	0.741			99		90-110		
Sulfate	7.50	7.73			103		90-110		
Batch number: 20050304503A	Sample number(s): 1258087,1258090,1258093,1258096,1258099								
Total Organic Carbon	25	24.25			97		91-113		
Batch number: 20050304503B	Sample number(s): 1258102,1258105								
Total Organic Carbon	25	24.25			97		91-113		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20044133301A	Sample number(s): 1258087,1258090,1258093,1258096,1258099,1258102,1258105								
Sulfide	20	18.33	20	18.33	92	92	80-120	0	5

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 200431486601	Sample number(s): 1258089,1258092,1258095,1258098,1258101,1258104,1258107 UNSPK: 1258095									
Iron	31.14	0.418	30.94	0.418	31.32	-48 (2)	42 (2)	75-125	1	20
	mg/l	**mg/l**	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20043076115A	Sample number(s): 1258087,1258090,1258093,1258096,1258099,1258102,1258105 UNSPK: 1258102									
Nitrate Nitrogen	0.10 U	1.00	1.10			110		90-110		
Sulfate	0.479	10	12.16			117*		90-110		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

REVISED

Quality Control Summary

Client Name: The Boeing Company
Reported: 03/18/2020 14:40

Group Number: 2087461

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	mg/l	mg/l		
Batch number: 200431486601	Sample number(s): 1258089,1258092,1258095,1258098,1258101,1258104,1258107 BKG: 1258095			
Iron	31.14	31.16	0	20
	mg/l	mg/l		
Batch number: 20043076115A	Sample number(s): 1258087,1258090,1258093,1258096,1258099,1258102,1258105 BKG: 1258102			
Nitrate Nitrogen	0.10 U	0.10 U	0 (1)	15
Sulfate	0.479	0.479	0 (1)	15
	mg/l	mg/l		
Batch number: 20044133301A	Sample number(s): 1258087,1258090,1258093,1258096,1258099,1258102,1258105 BKG: 1258105			
Sulfide	2.0 U	2.0 U	0 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: C200502AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1258108	103	102	98	96
Blank	102	101	99	96
LCS	103	102	100	98
LCSD	103	102	100	98
Limits:	80-120	80-120	80-120	80-120

Analysis Name: 8260C Boeing 38
Batch number: H200772AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1258096DL	100	101	99	94
Blank	100	107	99	95
LCS	99	103	101	96
LCSD	98	101	101	96
Limits:	80-120	80-120	80-120	80-120

Analysis Name: 8260C Boeing 38
Batch number: I200501AA

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

REVISED

Quality Control Summary

Client Name: The Boeing Company
Reported: 03/18/2020 14:40

Group Number: 2087461

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: I200501AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1258087	100	102	94	93
1258090	99	96	97	94
1258090DL	101	97	94	91
1258093	101	102	95	93
1258096	99	102	95	94
1258099	99	101	95	93
1258105	100	99	95	92
Blank	100	102	95	92
LCS	98	103	95	94
LCSD	99	95	96	94
Limits:	80-120	80-120	80-120	80-120

Analysis Name: 8260C Boeing 38
Batch number: I200511AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1258102	105	101	94	92
Blank	100	102	95	93
LCS	98	97	96	93
LCSD	99	102	96	94
Limits:	80-120	80-120	80-120	80-120

Analysis Name: AMEE by RSK-175
Batch number: 200440003A

	Propene
1258087	68
1258087DL	96
1258090	94
1258090DL	100
1258093	73
1258093DL	93
1258096	80
1258096DL	99
1258099	84
1258099DL	104
1258102	81
1258102DL	93
1258105	82
1258105DL	83
Blank	100
LCS	102

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

REVISED

Quality Control Summary

Client Name: The Boeing Company
Group Number: 2087461
Reported: 03/18/2020 14:40

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: AMEE by RSK-175
Batch number: 200440003A

	Propene
LCSD	98
Limits:	46-135

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 13419 For Eurofins Lancaster Laboratories Environmental use only Group # 258461 Sample # 258087-108

Please print. Instructions on reverse side correspond.

1 Client Information

Site Location: Gresham, Oregon
Site Project: Boeing of Portland
Site Program/#: 0025116.120.412
Boeing PM: Debbie Taege
Consultant Contact: Chris Kimmel
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify):
Sampler: WHL / GJN # of Coolers: 1

2 Sample Identification / 3 Matrix / Collected / No. of Containers

Sample Identification	Collected Date	Collected Time	Matrix	No. of Containers
BOP-72i-0220	2/11	13:09	H_2O	12
BOP-73i-0220		13:55		
BOP-75i-0220		12:26		
BOP-77i-0220		14:40		
BOP-80i-0220		11:31		
BOP-81i-0220		10:42		
BOP-82i-0220		9:48		
Trip Blanks	—	—	H_2O	2

4 Analyses Requested

Sample Identification	VOC (38 list)	TOC	Sulfate	Sulfide	Nitrate	AMEE	Total Iron	Dissolved Iron
BOP-72i-0220	X	X	X	X	X	X	X	X
BOP-73i-0220	X	X	X	X	X	X	X	X
BOP-75i-0220	X	X	X	X	X	X	X	X
BOP-77i-0220	X	X	X	X	X	X	X	X
BOP-80i-0220	X	X	X	X	X	X	X	X
BOP-81i-0220	X	X	X	X	X	X	X	X
BOP-82i-0220	X	X	X	X	X	X	X	X
Trip Blanks	X							

5 Remarks/Comments

6 Turnaround Time Requested (please circle)

(Standard) 5 day 4 day
72 hour 48 hour 24 hour
Date needed: _____

	Date/Time	Received by:	Date/Time 7
Relinquished by: W. Young	2/11/20 16:30		
Relinquished by:	Date/Time	Received by:	Date/Time 2/12/20
Relinquished by:	Date/Time	Received by:	Date/Time 2/12/20
Relinquished by commercial carrier (circle): UPS FedEx X Other:		Temperature upon Receipt: 1.8 °C	1013
		Custody Seals Intact?: Yes No	2/12/2020

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.

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 275358

Group Number(s): 2087461

Client: Boeing

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Date:	02/12/2020
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	2
Samples Chilled:	Yes	Trip Blank Type:	HCl
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Tamara Lugardo

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-03	1.8	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

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

Tests 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.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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. 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. 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.

eurofins | Lancaster Laboratories Environmental

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



REVISED

ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 9U4-26
Seattle WA 98124-2207

Report Date: April 03, 2020 11:09

Project: Boeing of Portland/025116.120.412

Account #: 13419
Group Number: 2087761
PO Number: 025116.120.412
State of Sample Origin: OR

Electronic Copy To	Landau	Attn: Chris Kimmel
Electronic Copy To	Landau Associates	Attn: Dani Jorgensen
Electronic Copy To	Landau	Attn: Erin Waibel
Electronic Copy To	Landau Associates	Attn: Laura Lafferty

Respectfully Submitted,

Kay Hower

(717) 556-7364

Previous versions of this report were generated on:
02/24/2020 08:22
03/16/2020 12:15

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



REVISED

SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
BOP-74i-0220 Water	02/12/2020 09:59	1259291
BOP-74i-0220 Total Metals Water	02/12/2020 09:59	1259292
BOP-74i-0220 Dissolved Metals Water	02/12/2020 09:59	1259293
BOP-76i-0220 Water	02/12/2020 11:06	1259294
BOP-76i-0220 Total Metals Water	02/12/2020 11:06	1259295
BOP-76i-0220 Dissolved Metals Water	02/12/2020 11:06	1259296
BOP-88i-0220 Water	02/12/2020 12:46	1259297
BOP-88i-0220 Total Metals Water	02/12/2020 12:46	1259298
BOP-88i-0220 Dissolved Metals Water	02/12/2020 12:46	1259299
E-2-0220 Water	02/12/2020 15:00	1259300
E-2-0220 Total Metals Water	02/12/2020 15:00	1259301
E-2-0220 Dissolved Metals Water	02/12/2020 15:00	1259302
Trip Blanks Water	02/12/2020	1259303

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Project Name: Boeing of Portland/025116.120.412
ELLE Group #: 2087761

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.
Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Preservation requirements were not met.

Sample #: 1259297

Preservation requirements were not met. The pH preservation of all non-volatile containers was checked upon receipt at the laboratory. The container for the following analysis was not within the specification and was adjusted accordingly by the laboratory: Total Organic Carbon, Sulfide

Analysis Specific Comments:

RSKSOP-175 modified, GC Miscellaneous

Sample #s: 1259297

Preservation requirements were not met.
A preserved vial was submitted for analysis. However, the pH at the time of analysis was 5.

Batch #: 200490005A (Sample number(s): 1259291, 1259294, 1259297, 1259300)

The recovery(ies) for one or more surrogates exceeded the acceptance window indicating a positive bias for sample(s) 1259297

SW-846 6010C, Metals

Sample #s: 1259292

Reporting limits were raised due to interference from the sample matrix.

SW-846 6010C, Metals Dissolved

Batch #: 200481486601 (Sample number(s): 1259296, 1259299 UNSPK: 1259299 BKG: 1259299)

The recovery(ies) for the following analyte(s) in the MS and/or MSD exceeded the acceptance window indicating a positive bias: Iron

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Iron

EPA 300.0, Wet Chemistry

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Sample #s: 1259297

Reporting limits were raised due to interference from the sample matrix.

Batch #: 20044076217A (Sample number(s): 1259291, 1259294, 1259297, 1259300 UNSPK: 1259294 BKG: 1259294)

The recovery(ies) for the following analyte(s) in the MS exceeded the acceptance window indicating a positive bias: Sulfate

eurofins | Lancaster Laboratories Environmental

March 31, 2020

Mr. Chris Kimmel
Landau
130 Second Avenue South
Edmonds, WA 98020

Dear Mr. Kimmel:

I am writing to inform you of revised analytical reports that are being issued for the following:

Project: Boeing of Portland/025116.120.412
Group No.: 2087761

ELLE Sample No.	Client Sample Identification	Collection Date
1259292	BOP-74i-0220 Total Metals Water	02/12/2020

The correction to the data affects the SW-846 6010C iron analysis only.

In response to your inquiry of the data, it was determined that the Sample No. 1259292 is not homogeneous due to turbidity of the sample. The sample was analyzed in duplicate multiple times and the sample was changed to multiple trial reporting. Below is a summary of each trial.

Sample 1259292		
Reported Fe results mg/l		
Trial 2	**Trial 3**	**Trial 4**
69.5	53.2	124

The revised analytical report reflects this correction and is enclosed.

You are a valued client and we apologize for any inconvenience that this incident may have caused. If you have any questions or require further assistance, please call me at 717-556-9531. We appreciate your business and look forward to continuing to serve your laboratory needs.

Sincerely,

Katlin Burkholder
Manager
Metals

KB/jll
Enclosures

cc: Kay G. Hower

eurofins | Lancaster Laboratories Environmental

March 16, 2020

Ms. Chris Kimmel
Landau
130 Second Avenue South
Edmonds WA 98020

Dear Ms. Kimmel:

I am writing to inform you of revised analytical reports that are being issued for the following:

Project: Boeing of Portland/025116.120.412
Group No.: 2087761

ELLE Sample No.	Client Sample Identification	Collection Date
1259292	BOP-74i-0220 Total Metals Water - Boeing Portland 025116.120.412	02/12/2020
1259295	BOP-76i-0220 Total Metals Water - Boeing Portland 025116.120.412	02/12/2020
1259301	E-2-0220 Total Metals Water - Boeing Portland 025116.120.412	02/12/2020

The correction to the data affects the Iron analysis only.

In response to your inquiry regarding the data it was determined that original data reported was incorrect. The samples were redigested in duplicate and re-reported.

ELLE Sample No.1259292	original data (mg/L)	new data (mg/L)
Iron	284	53.2

ELLE Sample No.1259295	original data (mg/L)	new data (mg/L)
Iron	0.666	35.3

ELLE Sample No.1259301	original data (mg/L)	new data (mg/L)
Iron	38.7	2.90

The revised analytical report reflects this correction and is enclosed.

You are a valued client and we apologize for any inconvenience that this incident may have caused. If you have any questions or require further assistance, please call me at 717-556-9337. We appreciate your business and look forward to continuing to serve your laboratory needs.

Sincerely,

Parker Lindstrom
Senior Chemist
Metals

PL/jll
Enclosures

cc: Kay G. Hower

Eurofins Lancaster Laboratories Environmental, LLC
2425 New Holland Pike
Lancaster, PA 17601
T | 717-656-2300
F | 717-656-2681
www.EurofinsUS.com/LancLabsEnv

REVISED

Sample Description: **BOP-74i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 09:59

The Boeing Company
ELLE Sample #: WW 1259291
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**68**		5.0	1
11996	**Benzene**	71-43-2	**2.8**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**190**		5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	**Chloroform**	67-66-3	**1.3**		0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**2.8**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	**2-Hexanone**	591-78-6	**20**		5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	**Methylene Chloride**	75-09-2	**0.9**		0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**3.9**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**1.6**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	**Ethane**	74-84-0	**8.5**		5.0	1
07105	**Ethene**	74-85-1	**5.1**		5.0	1
07105	**Methane**	74-82-8	**15,000**	**E**	5.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	500	U	500	100

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Analysis Report

REVISED

Sample Description: **BOP-74i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 09:59

The Boeing Company
ELLE Sample #: WW 1259291
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Ethane	74-84-0	500 U	500	100
07105	Ethene	74-85-1	500 U	500	100
07105	**Methane**	74-82-8	**22,000**	500	100
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
00228	**Sulfate**	14808-79-8	**10.3**	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**752**	250	250
	EPA 376.1		**mg/l**	**mg/l**	
01333	**Sulfide**	18496-25-8	**8.0**	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	C200502AA	02/19/2020 21:03	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	C200502AA	02/19/2020 21:02	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200490005A	02/19/2020 14:58	Esther Kathryn Lane	100
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200490005A	02/19/2020 17:04	Esther Kathryn Lane	1
00368	Nitrate Nitrogen	EPA 300.0	1	20044076217A	02/14/2020 05:18	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20044076217A	02/14/2020 05:18	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20051304503B	02/21/2020 04:03	Bethany Sandone	250
01333	Sulfide	EPA 376.1	1	20049133301A	02/18/2020 10:46	Nicole Munsell	1

REVISED

Sample Description: **BOP-74i-0220 Total Metals Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 09:59

The Boeing Company
ELLE Sample #: WW 1259292
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**69.5**	0.200	1
	Reporting limits were raised due to interference from the sample matrix.				
01754	**Iron**	7439-89-6	**53.2**	0.200	1
	Reporting limits were raised due to interference from the sample matrix.				
01754	**Iron**	7439-89-6	**124**	1.00	1
	Reporting limits were raised due to interference from the sample matrix.				

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	2	200711404403	03/11/2020 20:41	Elaine F Stoltzfus	1
01754	Iron	SW-846 6010C	3	200721404402	03/12/2020 20:20	Elaine F Stoltzfus	1
01754	Iron	SW-846 6010C	4	200861404401	03/26/2020 23:27	Cindy M Gehman	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200451404402	02/14/2020 06:00	Annamaria Kuhns	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	2	200711404403	03/11/2020 13:55	JoElla L Rice	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	3	200721404402	03/12/2020 14:30	JoElla L Rice	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	4	200861404401	03/26/2020 14:00	JoElla L Rice	1

REVISED

Sample Description: **BOP-74i-0220 Dissolved Metals Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 09:59

The Boeing Company
ELLE Sample #: WW 1259293
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**90.4**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	2	200861486601	03/26/2020 17:10	Cindy M Gehman	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200451486601	02/14/2020 09:30	Annamaria Kuhns	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	2	200861486601	03/26/2020 12:35	Annamaria Kuhns	1

REVISED

Sample Description: **BOP-76i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 11:06

The Boeing Company
ELLE Sample #: WW 1259294
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**20**		5.0	1
11996	**Benzene**	71-43-2	**0.8**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**13**		5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**3.4**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**1**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.2**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**1.5**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	Ethane	74-84-0	5.0	U	5.0	1
07105	Ethene	74-85-1	5.0	U	5.0	1
07105	**Methane**	74-82-8	**15,000**	**E**	5.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	500	U	500	100
07105	Ethane	74-84-0	500	U	500	100

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Analysis Report

REVISED

Sample Description: **BOP-76i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 11:06

The Boeing Company
ELLE Sample #: WW 1259294
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Ethene	74-85-1	500 U	500	100
07105	**Methane**	74-82-8	**19,000**	500	100
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**0.21**	0.10	1
00228	Sulfate	14808-79-8	1.0 U	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**370**	100	100
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	C200502AA	02/19/2020 19:56	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	C200502AA	02/19/2020 19:55	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200490005A	02/19/2020 15:16	Esther Kathryn Lane	100
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200490005A	02/19/2020 17:22	Esther Kathryn Lane	1
00368	Nitrate Nitrogen	EPA 300.0	1	20044076217A	02/14/2020 03:45	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20044076217A	02/14/2020 03:45	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20051304503B	02/21/2020 13:24	Bethany Sandone	100
01333	Sulfide	EPA 376.1	1	20049133301A	02/18/2020 10:46	Nicole Munsell	1

REVISED

Sample Description: **BOP-76i-0220 Total Metals Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 11:06

The Boeing Company
ELLE Sample #: WW 1259295
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**35.3**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	2	200711404401	03/11/2020 13:02	Patrick J Engle	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200451404402	02/14/2020 06:00	Annamaria Kuhns	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	2	200711404401	03/11/2020 03:42	James L Mertz	1

REVISED

Sample Description: **BOP-76i-0220 Dissolved Metals Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 11:06

The Boeing Company
ELLE Sample #: WW 1259296
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**35.5**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200481486601	02/17/2020 23:11	Cindy M Gehman	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200481486601	02/17/2020 17:55	JoElla L Rice	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	2	200711486601	03/11/2020 04:30	James L Mertz	1

REVISED

Sample Description: **BOP-88i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 12:46

The Boeing Company
ELLE Sample #: WW 1259297
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**270**	**E**	5.0	1
11996	**Benzene**	71-43-2	**2.5**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**1,900**	**E**	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	**Chloroform**	67-66-3	**2.8**		0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**0.3**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**160**	**E**	0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**0.3**		0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	**2-Hexanone**	591-78-6	**150**		5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	**Methylene Chloride**	75-09-2	**0.6**		0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**0.9**		0.2	1
11996	**Toluene**	108-88-3	**0.3**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**28**	**E**	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**29**	**E**	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	**Acetone**	67-64-1	**310**		100	20
11996	Benzene	71-43-2	4.0	U	4.0	20
11996	Bromodichloromethane	75-27-4	10	U	10	20
11996	Bromoform	75-25-2	10	U	10	20
11996	Bromomethane	74-83-9	10	U	10	20
11996	**2-Butanone**	78-93-3	**1,800**		100	20
11996	Carbon Disulfide	75-15-0	10	U	10	20

REVISED

Sample Description: **BOP-88i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 12:46

The Boeing Company
ELLE Sample #: WW 1259297
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Carbon Tetrachloride	56-23-5	4.0	U	4.0	20
11996	Chlorobenzene	108-90-7	10	U	10	20
11996	Chloroethane	75-00-3	10	U	10	20
11996	Chloroform	67-66-3	4.0	U	4.0	20
11996	Chloromethane	74-87-3	10	U	10	20
11996	Dibromochloromethane	124-48-1	10	U	10	20
11996	1,1-Dichloroethane	75-34-3	10	U	10	20
11996	1,2-Dichloroethane	107-06-2	4.0	U	4.0	20
11996	1,1-Dichloroethene	75-35-4	4.0	U	4.0	20
11996	**cis-1,2-Dichloroethene**	156-59-2	**140**		4.0	20
11996	trans-1,2-Dichloroethene	156-60-5	4.0	U	4.0	20
11996	1,2-Dichloropropane	78-87-5	10	U	10	20
11996	cis-1,3-Dichloropropene	10061-01-5	4.0	U	4.0	20
11996	trans-1,3-Dichloropropene	10061-02-6	4.0	U	4.0	20
11996	Ethylbenzene	100-41-4	10	U	10	20
11996	**2-Hexanone**	591-78-6	**150**		100	20
11996	4-Methyl-2-pentanone	108-10-1	100	U	100	20
11996	Methylene Chloride	75-09-2	10	U	10	20
11996	Styrene	100-42-5	10	U	10	20
11996	1,1,2,2-Tetrachloroethane	79-34-5	4.0	U	4.0	20
11996	Tetrachloroethene	127-18-4	4.0	U	4.0	20
11996	Toluene	108-88-3	4.0	U	4.0	20
11996	112Trichloro122Trifluoroethane	76-13-1	10	U	10	20
11996	1,1,1-Trichloroethane	71-55-6	10	U	10	20
11996	1,1,2-Trichloroethane	79-00-5	4.0	U	4.0	20
11996	**Trichloroethene**	79-01-6	**24**		4.0	20
11996	Trichlorofluoromethane	75-69-4	10	U	10	20
11996	Vinyl Acetate	108-05-4	10	U	10	20
11996	**Vinyl Chloride**	75-01-4	**23**		4.0	20
11996	m+p-Xylene	179601-23-1	10	U	10	20
11996	o-Xylene	95-47-6	10	U	10	20
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	Ethane	74-84-0	5.0	U	5.0	1
07105	**Ethene**	74-85-1	**49**		5.0	1
07105	**Methane**	74-82-8	**12,000**	**E**	5.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	250	U	250	50
07105	Ethane	74-84-0	250	U	250	50
07105	Ethene	74-85-1	250	U	250	50
07105	**Methane**	74-82-8	**15,000**		250	50

Preservation requirements were not met.
A preserved vial was submitted for analysis. However, the pH at the time of analysis was 5.

Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Analysis Report

REVISED

Sample Description: **BOP-88i-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 12:46

The Boeing Company
ELLE Sample #: WW 1259297
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**2.1**	0.50	5
	Reporting limits were raised due to interference from the sample matrix.				
00228	**Sulfate**	14808-79-8	**290**	20.0	20
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**17,000**	500	500
	EPA 376.1		**mg/l**	**mg/l**	
01333	**Sulfide**	18496-25-8	**4.0**	2.0	1

Sample Comments

Preservation requirements were not met. The pH preservation of all non-volatile containers was checked upon receipt at the laboratory. The container for the following analysis was not within the specification and was adjusted accordingly by the laboratory: Total Organic Carbon, Sulfide

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	C200502AA	02/19/2020 21:47	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	C200502AA	02/19/2020 22:09	Jennifer K Howe	20
01163	GC/MS VOA Water Prep	SW-846 5030C	1	C200502AA	02/19/2020 21:46	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	C200502AA	02/19/2020 22:08	Jennifer K Howe	20
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200490005A	02/19/2020 15:34	Esther Kathryn Lane	50
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200490005A	02/19/2020 18:16	Esther Kathryn Lane	1
00368	Nitrate Nitrogen	EPA 300.0	2	20044076217A	02/14/2020 03:08	Niyati Desai	5
00228	Sulfate	EPA 300.0	2	20044076217A	02/19/2020 00:19	Kevin Litwa	20
00273	Total Organic Carbon	SM 5310 C-2011	1	20051304503B	02/21/2020 04:32	Bethany Sandone	500
01333	Sulfide	EPA 376.1	1	20049133301A	02/18/2020 10:46	Nicole Munsell	1

REVISED

Sample Description: **BOP-88i-0220 Total Metals Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 12:46

The Boeing Company
ELLE Sample #: WW 1259298
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**826**	1.00	5

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200481404401	02/17/2020 12:06	Lisa J Cooke	5
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200481404401	02/17/2020 03:24	James L Mertz	1

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Analysis Report

REVISED

Sample Description: **BOP-88i-0220 Dissolved Metals Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 12:46

The Boeing Company
ELLE Sample #: WW 1259299
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**834**	1.03	5

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200481486601	02/18/2020 07:12	Lisa J Cooke	5
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200481486601	02/17/2020 17:55	JoElla L Rice	1

REVISED

Sample Description: **E-2-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 15:00

The Boeing Company
ELLE Sample #: WW 1259300
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Acetone	67-64-1	5.0 U	5.0	1
11996	Benzene	71-43-2	0.2 U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5 U	0.5	1
11996	Bromoform	75-25-2	0.5 U	0.5	1
11996	Bromomethane	74-83-9	0.5 U	0.5	1
11996	2-Butanone	78-93-3	5.0 U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5 U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2 U	0.2	1
11996	Chlorobenzene	108-90-7	0.5 U	0.5	1
11996	Chloroethane	75-00-3	0.5 U	0.5	1
11996	Chloroform	67-66-3	0.2 U	0.2	1
11996	Chloromethane	74-87-3	0.5 U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5 U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5 U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2 U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2 U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2 U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2 U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5 U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2 U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2 U	0.2	1
11996	Ethylbenzene	100-41-4	0.5 U	0.5	1
11996	2-Hexanone	591-78-6	5.0 U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0 U	5.0	1
11996	Methylene Chloride	75-09-2	0.5 U	0.5	1
11996	Styrene	100-42-5	0.5 U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2 U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2 U	0.2	1
11996	Toluene	108-88-3	0.2 U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5 U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5 U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2 U	0.2	1
11996	Trichloroethene	79-01-6	0.2 U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5 U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5 U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2 U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5 U	0.5	1
11996	o-Xylene	95-47-6	0.5 U	0.5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**370**	5.0	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
00228	**Sulfate**	14808-79-8	**2.6**	1.0	1

REVISED

Sample Description: **E-2-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 15:00

The Boeing Company
ELLE Sample #: WW 1259300
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 5310 C-2011**		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**1.8**	1.0	1
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	C200502AA	02/19/2020 20:18	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	C200502AA	02/19/2020 20:17	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200490005A	02/19/2020 18:34	Esther Kathryn Lane	1
00368	Nitrate Nitrogen	EPA 300.0	1	20044076217A	02/14/2020 06:14	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20044076217A	02/14/2020 06:14	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20051304503B	02/21/2020 05:00	Bethany Sandone	1
01333	Sulfide	EPA 376.1	1	20049133301A	02/18/2020 10:46	Nicole Munsell	1

REVISED

Sample Description: **E-2-0220 Total Metals Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 15:00

The Boeing Company
ELLE Sample #: WW 1259301
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**2.90**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	2	200711404403	03/11/2020 20:47	Elaine F Stoltzfus	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	200451404402	02/14/2020 06:00	Annamaria Kuhns	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	2	200711404403	03/11/2020 13:55	JoElla L Rice	1

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Analysis Report

REVISED

Sample Description: **E-2-0220 Dissolved Metals Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020 15:00

The Boeing Company
ELLE Sample #: WW 1259302
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**1.88**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	200451486601	02/14/2020 17:32	Elaine F Stoltzfus	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	200451486601	02/14/2020 09:30	Annamaria Kuhns	1

REVISED

Sample Description: **Trip Blanks Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/13/2020 11:20
Collection Date/Time: 02/12/2020

The Boeing Company
ELLE Sample #: WW 1259303
ELLE Group #: 2087761
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	C200502AA	02/19/2020 14:22	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	C200502AA	02/19/2020 14:21	Jennifer K Howe	1

REVISED

Quality Control Summary

Client Name: The Boeing Company
Group Number: 2087761
Reported: 04/03/2020 11:09

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 was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: C200502AA	Sample number(s): 1259291,1259294,1259297,1259300,1259303		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

REVISED

Quality Control Summary

Client Name: The Boeing Company
Reported: 04/03/2020 11:09

Group Number: 2087761

Method Blank (continued)

Analysis Name	Result	LOQ
	ug/l	ug/l
Batch number: 200490005A	Sample number(s): 1259291,1259294,1259297,1259300	
Acetylene	5.0 U	5.0
Ethane	5.0 U	5.0
Ethene	5.0 U	5.0
Methane	5.0 U	5.0
	mg/l	mg/l
Batch number: 200451486601	Sample number(s): 1259302	
Iron	0.206 U	0.206
Batch number: 200481404401	Sample number(s): 1259298	
Iron	0.200 U	0.200
Batch number: 200481486601	Sample number(s): 1259296,1259299	
Iron	0.206 U	0.206
Batch number: 200711404401	Sample number(s): 1259295	
Iron	0.200 U	0.200
Batch number: 200711404403	Sample number(s): 1259292,1259301	
Iron	0.200 U	0.200
Batch number: 200721404402	Sample number(s): 1259292	
Iron	0.200 U	0.200
Batch number: 200861404401	Sample number(s): 1259292	
Iron	0.200 U	0.200
Batch number: 200861486601	Sample number(s): 1259293	
Iron	0.206 U	0.206
Batch number: 20044076217A	Sample number(s): 1259291,1259294,1259297,1259300	
Nitrate Nitrogen	0.10 U	0.10
Sulfate	1.0 U	1.0
Batch number: 20051304503B	Sample number(s): 1259291,1259294,1259297,1259300	
Total Organic Carbon	1.0 U	1.0
Batch number: 20049133301A	Sample number(s): 1259291,1259294,1259297,1259300	
Sulfide	2.0 U	2.0

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: C200502AA	Sample number(s): 1259291,1259294,1259297,1259300,1259303								

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

REVISED

Quality Control Summary

Client Name: The Boeing Company
Reported: 04/03/2020 11:09

Group Number: 2087761

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Acetone	37.5	40.1	37.5	42.34	107	113	60-146	5	30
Benzene	5.00	4.93	5.00	4.96	99	99	80-120	1	30
Bromodichloromethane	5.00	5.07	5.00	5.09	101	102	73-124	0	30
Bromoform	5.00	4.94	5.00	4.88	99	98	49-144	1	30
Bromomethane	5.00	4.97	5.00	4.96	99	99	60-136	0	30
2-Butanone	37.5	36.98	37.5	39.67	99	106	59-141	7	30
Carbon Disulfide	5.00	4.36	5.00	4.39	87	88	67-130	1	30
Carbon Tetrachloride	5.00	5.20	5.00	5.15	104	103	64-141	1	30
Chlorobenzene	5.00	5.03	5.00	5.08	101	102	80-120	1	30
Chloroethane	5.00	4.99	5.00	5.04	100	101	63-120	1	30
Chloroform	5.00	5.13	5.00	5.17	103	103	80-120	1	30
Chloromethane	5.00	4.94	5.00	4.91	99	98	56-124	1	30
Dibromochloromethane	5.00	5.08	5.00	5.12	102	102	64-138	1	30
1,1-Dichloroethane	5.00	4.97	5.00	4.95	99	99	74-120	0	30
1,2-Dichloroethane	5.00	5.09	5.00	5.15	102	103	69-122	1	30
1,1-Dichloroethene	5.00	4.58	5.00	4.63	92	93	80-131	1	30
cis-1,2-Dichloroethene	5.00	5.13	5.00	5.20	103	104	80-122	1	30
trans-1,2-Dichloroethene	5.00	4.69	5.00	4.77	94	95	80-122	2	30
1,2-Dichloropropane	5.00	5.13	5.00	5.19	103	104	80-120	1	30
cis-1,3-Dichloropropene	5.00	4.85	5.00	4.84	97	97	67-121	0	30
trans-1,3-Dichloropropene	5.00	4.66	5.00	4.60	93	92	61-129	1	30
Ethylbenzene	5.00	4.99	5.00	5.01	100	100	80-120	0	30
2-Hexanone	25	24.12	25	26.22	96	105	52-140	8	30
4-Methyl-2-pentanone	25	24.46	25	25.83	98	103	55-140	5	30
Methylene Chloride	5.00	4.84	5.00	4.95	97	99	80-120	2	30
Styrene	5.00	4.94	5.00	5.01	99	100	80-120	1	30
1,1,2,2-Tetrachloroethane	5.00	4.93	5.00	4.94	99	99	75-123	0	30
Tetrachloroethene	5.00	5.15	5.00	5.15	103	103	80-120	0	30
Toluene	5.00	4.95	5.00	4.98	99	100	80-120	1	30
112Trichloro122Trifluoroethane	5.00	4.98	5.00	4.97	100	99	75-133	0	30
1,1,1-Trichloroethane	5.00	4.92	5.00	4.95	98	99	78-126	1	30
1,1,2-Trichloroethane	5.00	5.19	5.00	5.19	104	104	80-120	0	30
Trichloroethene	5.00	5.04	5.00	5.06	101	101	80-120	0	30
Trichlorofluoromethane	5.00	6.06	5.00	6.05	121	121	62-136	0	30
Vinyl Acetate	12.5	12.33	12.5	12.05	99	96	38-145	2	30
Vinyl Chloride	5.00	5.00	5.00	4.99	100	100	60-125	0	30
m+p-Xylene	10	10.08	10	10.15	101	102	80-120	1	30
o-Xylene	5.00	5.01	5.00	4.97	100	99	80-120	1	30
	ug/l	**ug/l**	**ug/l**	**ug/l**					
Batch number: 200490005A	Sample number(s): 1259291,1259294,1259297,1259300								
Acetylene	51.25	51.99	51.25	51.43	101	100	57-146	1	20
Ethane	59.39	58.64	59.39	58.79	99	99	85-115	0	20
Ethene	60.4	59.13	60.4	59.55	98	99	83-115	1	20

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

REVISED

Quality Control Summary

Client Name: The Boeing Company
Reported: 04/03/2020 11:09

Group Number: 2087761

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Methane	59.42	59.49	59.42	60.16	100	101	85-115	1	20
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 200451486601	Sample number(s): 1259302								
Iron	0.400	0.404			101		80-120		
Batch number: 200481404401	Sample number(s): 1259298								
Iron	0.400	0.402			101		80-120		
Batch number: 200481486601	Sample number(s): 1259296,1259299								
Iron	0.400	0.472			118		80-120		
Batch number: 200711404401	Sample number(s): 1259295								
Iron	0.400	0.430			108		80-120		
Batch number: 200711404403	Sample number(s): 1259292,1259301								
Iron	0.400	0.469	0.400	0.451	117	113	80-120	4	20
Batch number: 200721404402	Sample number(s): 1259292								
Iron	0.400	0.405			101		80-120		
Batch number: 200861404401	Sample number(s): 1259292								
Iron	0.400	0.403	0.400	0.411	101	103	80-120	2	20
Batch number: 200861486601	Sample number(s): 1259293								
Iron	0.400	0.392	0.400	0.417	98	104	80-120	6	20
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20044076217A	Sample number(s): 1259291,1259294,1259297,1259300								
Nitrate Nitrogen	0.750	0.783			104		90-110		
Sulfate	7.50	7.96			106		90-110		
Batch number: 20051304503B	Sample number(s): 1259291,1259294,1259297,1259300								
Total Organic Carbon	25	24.96			100		91-113		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20049133301A	Sample number(s): 1259291,1259294,1259297,1259300								
Sulfide	20	18.6	20	18.6	93	93	80-120	0	5

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc	MS Spike Added	MS Conc	MSD Spike Added	MSD Conc	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

REVISED

Quality Control Summary

Client Name: The Boeing Company
Reported: 04/03/2020 11:09

Group Number: 2087761

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 200451486601	Sample number(s): 1259302 UNSPK: 1259302									
Iron	1.88	0.418	2.27	0.418	2.30	93 (2)	101 (2)	75-125	1	20
Batch number: 200481486601	Sample number(s): 1259296,1259299 UNSPK: 1259299									
Iron	834.13	0.418	812.11	0.418	838.05	-5275 (2)	938 (2)	75-125	3	20
	mg/l	**mg/l**	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20044076217A	Sample number(s): 1259291,1259294,1259297,1259300 UNSPK: 1259294									
Nitrate Nitrogen	0.211	1.00	1.25			104		90-110		
Sulfate	1.0 U	10	13.4			134*		90-110		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 200451486601	Sample number(s): 1259302 BKG: 1259302			
Iron	1.88	1.89	1	20
Batch number: 200481486601	Sample number(s): 1259296,1259299 BKG: 1259299			
Iron	834.13	816.62	2	20
	mg/l	**mg/l**		
Batch number: 20044076217A	Sample number(s): 1259291,1259294,1259297,1259300 BKG: 1259294			
Nitrate Nitrogen	0.211	0.199	6 (1)	15
Sulfate	1.0 U	1.0 U	0 (1)	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: C200502AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1259291	104	101	99	97
1259294	105	105	99	97

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

REVISED

Quality Control Summary

Client Name: The Boeing Company
Reported: 04/03/2020 11:09

Group Number: 2087761

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: C200502AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1259297	104	101	100	97
1259297DL	103	100	99	99
1259300	104	103	99	96
1259303	104	103	100	96
Blank	102	101	99	96
LCS	103	102	100	98
LCSD	103	102	100	98
Limits:	80-120	80-120	80-120	80-120

Analysis Name: AMEE by RSK-175
Batch number: 200490005A

	Propene
1259291	75
1259291DL	92
1259294	66
1259294DL	87
1259297	180*
1259297DL	93
1259300	78
Blank	96
LCS	94
LCSD	94
Limits:	46-135

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 13419 For Eurofins Lancaster Laboratories Environmental use only Group # 2087761 Sample # 1259291-303
Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Gresham, Oregon
Site Project: Boeing of Portland
Site Program/#: 02116.120.417
Boeing PM: Debbie Taege
Consultant Contact: Chris Kimmel
Report To: Above
Invoice To: [X] Boeing EHS [ ] Other (specify):
Sampler: GJN/WHL # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) VOC (38 Lit)	TOC	Sulfate	Sulfide	Nitrate	AMEE	Total Iron	Dissolved Iron					(5) Remarks/Comments
BOP-74i-0220	02/12/20	0959	H2O	12	X	X	X	X	X	X	X	X					
BOP-76i-0220	02/12/20	1106	H2O	12	X	X	X	X	X	X	X	X					
BOP-88i-0220	02/12/20	1246	H2O	12	X	X	X	X	X	X	X	X					
EB-0220	02/12/20	1500	H2O	12	X	X	X	X	X	X	X	X					
Trip Blanks	—	—	H2O	2	X												

Page 31 of 34

(6) Turnaround Time Requested (please circle)

Standard | 5 day | 4 day
72 hour | 48 hour | 24 hour
Date needed: _____

Relinquished by:	Date/Time 1641 02/12/20	Received by:	Date/Time (7)
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: NVR	Date/Time 2/13/20 1130
Relinquished by commercial carrier (circle): UPS FedEx Other:		Temperature upon Receipt: 0.7 °C Custody Seals Intact?: Yes No	

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.

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 275503

Group Number(s): 2087761

Client: BOEING

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Date:	02/13/2020
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	2
Samples Chilled:	Yes	Trip Blank Type:	HCl
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Julissa Rivera-Santa

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-03	0.7	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

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

Tests 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.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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. 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. 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.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is less than the LOQ
K2	Continuing Calibration Blank is above the QC limit and the sample result is less than the LOQ
K3	Initial Calibration Verification is above the QC limit and the sample result is less than the LOQ
K4	Continuing Calibration Verification is above the QC limit and the sample result is less than the LOQ
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 9U4-26
Seattle WA 98124-2207

Report Date: February 20, 2020 18:31

Project: Boeing of Portland/025116.120.412

Account #: 13419
Group Number: 2088235
PO Number: 025116.120.412
State of Sample Origin: OR

Electronic Copy To	Landau	Attn: Chris Kimmel
Electronic Copy To	Landau Associates	Attn: Dani Jorgensen
Electronic Copy To	Landau	Attn: Erin Waibel
Electronic Copy To	Landau Associates	Attn: Laura Lafferty

Respectfully Submitted,

Kay Hower

(717) 556-7364

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
E-12-0220 Water	02/13/2020 11:15	1261542
Trip Blank Water	02/13/2020	1261543

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Project Name: Boeing of Portland/025116.120.412
ELLE Group #: 2088235

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

No additional comments are necessary.

Sample Description: **E-12-0220 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/15/2020 09:43
Collection Date/Time: 02/13/2020 11:15

The Boeing Company
ELLE Sample #: WW 1261542
ELLE Group #: 2088235
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**1.2**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**3.6**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**0.2**		0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**7.3**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**1.0**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	C200502AA	02/19/2020 20:40	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	C200502AA	02/19/2020 20:39	Jennifer K Howe	1

Sample Description: **Trip Blank Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 02/15/2020 09:43
Collection Date/Time: 02/13/2020

The Boeing Company
ELLE Sample #: WW 1261543
ELLE Group #: 2088235
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	C200502AA	02/19/2020 14:44	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	C200502AA	02/19/2020 14:43	Jennifer K Howe	1

Quality Control Summary

Client Name: The Boeing Company Group Number: 2088235
Reported: 02/20/2020 18:31

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 was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: C200502AA	Sample number(s): 1261542-1261543		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/20/2020 18:31

Group Number: 2088235

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: C200502AA	Sample number(s): 1261542-1261543								
Acetone	37.5	40.1	37.5	42.34	107	113	60-146	5	30
Benzene	5.00	4.93	5.00	4.96	99	99	80-120	1	30
Bromodichloromethane	5.00	5.07	5.00	5.09	101	102	73-124	0	30
Bromoform	5.00	4.94	5.00	4.88	99	98	49-144	1	30
Bromomethane	5.00	4.97	5.00	4.96	99	99	60-136	0	30
2-Butanone	37.5	36.98	37.5	39.67	99	106	59-141	7	30
Carbon Disulfide	5.00	4.36	5.00	4.39	87	88	67-130	1	30
Carbon Tetrachloride	5.00	5.20	5.00	5.15	104	103	64-141	1	30
Chlorobenzene	5.00	5.03	5.00	5.08	101	102	80-120	1	30
Chloroethane	5.00	4.99	5.00	5.04	100	101	63-120	1	30
Chloroform	5.00	5.13	5.00	5.17	103	103	80-120	1	30
Chloromethane	5.00	4.94	5.00	4.91	99	98	56-124	1	30
Dibromochloromethane	5.00	5.08	5.00	5.12	102	102	64-138	1	30
1,1-Dichloroethane	5.00	4.97	5.00	4.95	99	99	74-120	0	30
1,2-Dichloroethane	5.00	5.09	5.00	5.15	102	103	69-122	1	30
1,1-Dichloroethene	5.00	4.58	5.00	4.63	92	93	80-131	1	30
cis-1,2-Dichloroethene	5.00	5.13	5.00	5.20	103	104	80-122	1	30
trans-1,2-Dichloroethene	5.00	4.69	5.00	4.77	94	95	80-122	2	30
1,2-Dichloropropane	5.00	5.13	5.00	5.19	103	104	80-120	1	30
cis-1,3-Dichloropropene	5.00	4.85	5.00	4.84	97	97	67-121	0	30
trans-1,3-Dichloropropene	5.00	4.66	5.00	4.60	93	92	61-129	1	30
Ethylbenzene	5.00	4.99	5.00	5.01	100	100	80-120	0	30
2-Hexanone	25	24.12	25	26.22	96	105	52-140	8	30
4-Methyl-2-pentanone	25	24.46	25	25.83	98	103	55-140	5	30
Methylene Chloride	5.00	4.84	5.00	4.95	97	99	80-120	2	30
Styrene	5.00	4.94	5.00	5.01	99	100	80-120	1	30
1,1,2,2-Tetrachloroethane	5.00	4.93	5.00	4.94	99	99	75-123	0	30
Tetrachloroethene	5.00	5.15	5.00	5.15	103	103	80-120	0	30
Toluene	5.00	4.95	5.00	4.98	99	100	80-120	1	30
112Trichloro122Trifluoroethane	5.00	4.98	5.00	4.97	100	99	75-133	0	30
1,1,1-Trichloroethane	5.00	4.92	5.00	4.95	98	99	78-126	1	30
1,1,2-Trichloroethane	5.00	5.19	5.00	5.19	104	104	80-120	0	30
Trichloroethene	5.00	5.04	5.00	5.06	101	101	80-120	0	30
Trichlorofluoromethane	5.00	6.06	5.00	6.05	121	121	62-136	0	30
Vinyl Acetate	12.5	12.33	12.5	12.05	99	96	38-145	2	30
Vinyl Chloride	5.00	5.00	5.00	4.99	100	100	60-125	0	30
m+p-Xylene	10	10.08	10	10.15	101	102	80-120	1	30
o-Xylene	5.00	5.01	5.00	4.97	100	99	80-120	1	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Quality Control Summary

Client Name: The Boeing Company Group Number: 2088235
Reported: 02/20/2020 18:31

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: C200502AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1261542	104	98	98	95
1261543	104	103	99	96
Blank	102	101	99	96
LCS	103	102	100	98
LCSD	103	102	100	98
Limits:	80-120	80-120	80-120	80-120

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 13419 For Eurofins Lancaster Laboratories Environmental use only Group # 168835 Sample # 126542-43

Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Gresham, Oregon
Site Project: Boeing of Portland
Site Program/#: 025116.120.412
Boeing PM: Debbie Taege
Consultant Contact: Chris Kimmel
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): ____
Sampler: WHL / GJN # of Coolers: 1

(2) Sample Identification / (3) Collected / Matrix / No. of Containers / (4) Analyses Requested / (5) Remarks/Comments

Sample Identification	Collected Date	Collected Time	Matrix	No. of Containers	VOC (38 list)
E-12-0220	2/13/20	11:15	H_2O	3	X
Trip Blank	—	—	H_2O	1	X

Page 6 of 12

(6) Turnaround Time Requested (please circle)

Standard | 5 day | 4 day
72 hour | 48 hour | 24 hour
Date needed: ____

			(7)
Relinquished by: [signature]	Date/Time 14:45 2/14/20	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: —	Date/Time 2/15/2020 943
Relinquished by commercial carrier (circle): UPS FedEx Other: ____		Temperature upon Receipt: 0.5 °C; Custody Seals Intact?: Yes No	

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.

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 275790

Group Number(s): 208835

Client: BOEING

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Date:	02/15/2020
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	No	Sample Date/Times match COC:	Yes
Samples Chilled:	Yes	Total Trip Blank Qty:	1
Paperwork Enclosed:	Yes	Trip Blank Type:	HCl
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Julissa Rivera-Santa

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	0.5	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

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

Tests 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.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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. 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. 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.

eurofins | Lancaster Laboratories Environmental

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 9U4-26
Seattle WA 98124-2207

Report Date: March 13, 2020 03:07

Project: Boeing of Portland/0025116.120.412

Account #: 13419
Group Number: 2089909
PO Number: 0025116.120.412
State of Sample Origin: OR

Electronic Copy To	Landau	Attn: Chris Kimmel
Electronic Copy To	Landau Associates	Attn: Dani Jorgensen
Electronic Copy To	Landau	Attn: Erin Waibel
Electronic Copy To	Landau Associates	Attn: Laura Lafferty

Respectfully Submitted,

Kay Hower

(717) 556-7364

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
E-11-0220 Water	02/27/2020 09:20	1269082
BOP-87i-0220 Water	02/27/2020 10:00	1269083
Trip Blank Water	02/27/2020	1269084

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Project Name: Boeing of Portland/0025116.120.412
ELLE Group #: 2089909

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

SW-846 8260C 25mL purge, GC/MS Volatiles

Sample #s: 1269083

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

The GC/MS volatile internal standard peak areas listed below are outside the acceptance criteria of -50% to +100% for both the diluted analysis and diluted re-analysis. The reported results are from both determinations.

Internal Standard - DL (Trial 2)	% Recovery
tert-Butyl Alcohol-d10	-68

Internal Standard - DL Re-analysis (Trial 3)	% Recovery
tert-Butyl Alcohol-d10	-59

Due to the need for reanalysis of the sample, the requirement for no headspace was not met. The Trial 3 was performed from a previously opened container with headspace.

Sample #s: 1269082

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

The recovery for sample surrogate standard, 1,2-Dichloroethane-d4, was outside the QC acceptance limits in Trial 1. The following action was taken: The sample was re-analyzed from a previously opened container with headspace (Trial 3) and the QC was within acceptance limits. The data is reported from all trials.

The GC/MS volatile internal standard peak areas listed below are

outside the acceptance criteria of -50% to +100% for Trial 2. No sample volume remains for re-analysis.

Internal Standard - DL Analysis (Trial 2)	% Recovery
tert-Butyl Alcohol-d10	-70

Due to the need for reanalysis of the sample, the requirement for no headspace was not met. The Trial 3 analysis was performed from a previously opened container with headspace.

Batch #: H200621AA (Sample number(s): 1269082-1269084)

The recovery(ies) for one or more surrogates exceeded the acceptance window indicating a positive bias for sample(s) 1269082

Sample Description: **E-11-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/28/2020 10:28
Collection Date/Time: 02/27/2020 09:20

The Boeing Company
ELLE Sample #: GW 1269082
ELLE Group #: 2089909
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**170**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**6.4**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	**Acetone**	67-64-1	**560**		50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**57**		50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10

Sample Description: **E-11-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/28/2020 10:28
Collection Date/Time: 02/27/2020 09:20

The Boeing Company
ELLE Sample #: GW 1269082
ELLE Group #: 2089909
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	**Toluene**	108-88-3	**5.4**		2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10
Trial ID: RE						
11996	**Acetone**	67-64-1	**580**	**E**	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**7.7**		5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.3**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1

Sample Description: **E-11-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/28/2020 10:28
Collection Date/Time: 02/27/2020 09:20

The Boeing Company
ELLE Sample #: GW 1269082
ELLE Group #: 2089909
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	**2-Hexanone**	591-78-6	**6.9**		5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	**Methylene Chloride**	75-09-2	**0.9**		0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**12**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

The recovery for sample surrogate standard, 1,2-Dichloroethane-d4, was outside the QC acceptance limits in Trial 1. The following action was taken: The sample was re-analyzed from a previously opened container with headspace (Trial 3) and the QC was within acceptance limits. The data is reported from all trials.

The GC/MS volatile internal standard peak areas listed below are outside the acceptance criteria of -50% to +100% for Trial 2. No sample volume remains for re-analysis.

Internal Standard - DL Analysis (Trial 2)	% Recovery
tert-Butyl Alcohol-d10	-70

Due to the need for reanalysis of the sample, the requirement for no headspace was not met. The Trial 3 analysis was performed from a previously opened container with headspace.

GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	Ethane	74-84-0	5.0	U	5.0	1
07105	Ethene	74-85-1	5.0	U	5.0	1
07105	**Methane**	74-82-8	**14,000**	**E**	5.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	500	U	500	100

Sample Description: **E-11-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/28/2020 10:28
Collection Date/Time: 02/27/2020 09:20

The Boeing Company
ELLE Sample #: GW 1269082
ELLE Group #: 2089909
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Ethane	74-84-0	500 U	500	100
07105	Ethene	74-85-1	500 U	500	100
07105	**Methane**	74-82-8	**19,000**	500	100
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**0.16**	0.10	1
00228	Sulfate	14808-79-8	1.0 U	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**143**	10.0	10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H200621AA	03/02/2020 14:17	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	H200621AA	03/02/2020 14:39	Jennifer K Howe	10
11996	8260C Boeing 38	SW-846 8260C 25mL purge	3-RE	H200652AA	03/05/2020 20:26	Don V Viray	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H200621AA	03/02/2020 14:16	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H200621AA	03/02/2020 14:38	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	3	H200652AA	03/05/2020 20:25	Don V Viray	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	200630002A	03/03/2020 13:45	Esther Kathryn Lane	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	200630002A	03/04/2020 20:44	Esther Kathryn Lane	100
00368	Nitrate Nitrogen	EPA 300.0	1	20059720213A	02/29/2020 03:07	Samantha Faverio	1
00228	Sulfate	EPA 300.0	1	20059720213A	02/29/2020 03:07	Samantha Faverio	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20060304501B	03/03/2020 10:21	Bethany Sandone	10

Sample Description: **BOP-87i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/28/2020 10:28
Collection Date/Time: 02/27/2020 10:00

The Boeing Company
ELLE Sample #: GW 1269083
ELLE Group #: 2089909
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	**Benzene**	71-43-2	**1.6**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**180**		5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	**Chloroform**	67-66-3	**1.6**		0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**0.2**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**3.7**		0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**0.2**		0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	**Methylene Chloride**	75-09-2	**0.6**		0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.3**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**73**	**E**	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	Acetone	67-64-1	50	U	50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**230**		50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10

Sample Description: **BOP-87i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/28/2020 10:28
Collection Date/Time: 02/27/2020 10:00

The Boeing Company
ELLE Sample #: GW 1269083
ELLE Group #: 2089909
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	**cis-1,2-Dichloroethene**	156-59-2	**3.4**		2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	**Vinyl Chloride**	75-01-4	**62**		2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10
Trial ID: DLRE						
11996	Acetone	67-64-1	50	U	50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**220**		50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	**cis-1,2-Dichloroethene**	156-59-2	**3.3**		2.0	10

Sample Description: **BOP-87i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/28/2020 10:28
Collection Date/Time: 02/27/2020 10:00

The Boeing Company
ELLE Sample #: GW 1269083
ELLE Group #: 2089909
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	**Vinyl Chloride**	75-01-4	**60**		2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

The GC/MS volatile internal standard peak areas listed below are outside the acceptance criteria of -50% to +100% for both the diluted analysis and diluted re-analysis. The reported results are from both determinations.

Internal Standard - DL (Trial 2)	% Recovery
tert-Butyl Alcohol-d10	-68

Internal Standard - DL Re-analysis (Trial 3)	% Recovery
tert-Butyl Alcohol-d10	-59

Due to the need for reanalysis of the sample, the requirement for no headspace was not met. The Trial 3 was performed from a previously opened container with headspace.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H200621AA	03/02/2020 15:00	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	H200621AA	03/02/2020 15:22	Jennifer K Howe	10

Sample Description: **BOP-87i-0220 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/28/2020 10:28
Collection Date/Time: 02/27/2020 10:00

The Boeing Company
ELLE Sample #: GW 1269083
ELLE Group #: 2089909
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	3-DLR E	H200652AA	03/05/2020 20:47	Don V Viray	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H200621AA	03/02/2020 14:59	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H200621AA	03/02/2020 15:21	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	3	H200652AA	03/05/2020 20:46	Don V Viray	10

Sample Description: **Trip Blank Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 02/28/2020 10:28
Collection Date/Time: 02/27/2020

The Boeing Company
ELLE Sample #: GW 1269084
ELLE Group #: 2089909
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H200621AA	03/02/2020 11:46	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H200621AA	03/02/2020 11:45	Jennifer K Howe	1

Quality Control Summary

Client Name: The Boeing Company
Group Number: 2089909
Reported: 03/13/2020 03:07

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 was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: H200621AA	Sample number(s): 1269082-1269084		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Group Number: 2089909
Reported: 03/13/2020 03:07

Method Blank (continued)

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: H200652AA	Sample number(s): 1269082-1269083		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5
Batch number: 200630002A	Sample number(s): 1269082		
Acetylene	5.0	U	5.0
Ethane	5.0	U	5.0
Ethene	5.0	U	5.0
Methane	5.0	U	5.0

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 03/13/2020 03:07

Group Number: 2089909

Method Blank (continued)

Analysis Name	Result	LOQ
	mg/l	mg/l
Batch number: 20059720213A	Sample number(s): 1269082	
Nitrate Nitrogen	0.10 U	0.10
Sulfate	1.0 U	1.0
Batch number: 20060304501B	Sample number(s): 1269082	
Total Organic Carbon	2.0 U	2.0

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: H200621AA	Sample number(s): 1269082-1269084								
Acetone	37.5	32.31	37.5	31.83	86	85	60-146	1	30
Benzene	5.00	4.98	5.00	4.98	100	100	80-120	0	30
Bromodichloromethane	5.00	4.81	5.00	4.80	96	96	73-124	0	30
Bromoform	5.00	4.46	5.00	4.45	89	89	49-144	0	30
Bromomethane	5.00	4.51	5.00	4.56	90	91	60-136	1	30
2-Butanone	37.5	38.56	37.5	38.48	103	103	59-141	0	30
Carbon Disulfide	5.00	4.52	5.00	4.51	90	90	67-130	0	30
Carbon Tetrachloride	5.00	4.51	5.00	4.49	90	90	64-141	0	30
Chlorobenzene	5.00	4.99	5.00	5.04	100	101	80-120	1	30
Chloroethane	5.00	4.88	5.00	4.80	98	96	63-120	2	30
Chloroform	5.00	4.79	5.00	4.82	96	96	80-120	1	30
Chloromethane	5.00	4.48	5.00	4.72	90	94	56-124	5	30
Dibromochloromethane	5.00	4.91	5.00	4.91	98	98	64-138	0	30
1,1-Dichloroethane	5.00	5.04	5.00	5.01	101	100	74-120	0	30
1,2-Dichloroethane	5.00	4.62	5.00	4.66	92	93	69-122	1	30
1,1-Dichloroethene	5.00	4.72	5.00	4.75	94	95	80-131	1	30
cis-1,2-Dichloroethene	5.00	5.07	5.00	5.15	101	103	80-122	2	30
trans-1,2-Dichloroethene	5.00	4.70	5.00	4.67	94	93	80-122	1	30
1,2-Dichloropropane	5.00	5.44	5.00	5.38	109	108	80-120	1	30
cis-1,3-Dichloropropene	5.00	4.83	5.00	4.82	97	96	67-121	0	30
trans-1,3-Dichloropropene	5.00	4.65	5.00	4.61	93	92	61-129	1	30
Ethylbenzene	5.00	4.79	5.00	4.82	96	96	80-120	1	30
2-Hexanone	25	26.28	25	26.28	105	105	52-140	0	30
4-Methyl-2-pentanone	25	25.76	25	25.92	103	104	55-140	1	30
Methylene Chloride	5.00	4.97	5.00	5.03	99	101	80-120	1	30
Styrene	5.00	4.95	5.00	4.99	99	100	80-120	1	30
1,1,2,2-Tetrachloroethane	5.00	5.21	5.00	5.40	104	108	75-123	4	30
Tetrachloroethene	5.00	4.82	5.00	4.92	96	98	80-120	2	30
Toluene	5.00	4.98	5.00	4.97	100	99	80-120	0	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 03/13/2020 03:07

Group Number: 2089909

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
112Trichloro122Trifluoroethane	5.00	4.81	5.00	4.80	96	96	75-133	0	30
1,1,1-Trichloroethane	5.00	4.38	5.00	4.34	88	87	78-126	1	30
1,1,2-Trichloroethane	5.00	5.21	5.00	5.22	104	104	80-120	0	30
Trichloroethene	5.00	4.83	5.00	4.87	97	97	80-120	1	30
Trichlorofluoromethane	5.00	4.78	5.00	4.84	96	97	62-136	1	30
Vinyl Acetate	12.5	11.14	12.5	11.09	89	89	38-145	0	30
Vinyl Chloride	5.00	4.53	5.00	4.64	91	93	60-125	2	30
m+p-Xylene	10	9.86	10	9.88	99	99	80-120	0	30
o-Xylene	5.00	4.83	5.00	4.83	97	97	80-120	0	30
Batch number: H200652AA	Sample number(s): 1269082-1269083								
Acetone	37.5	31.08			83		60-146		
Benzene	5.00	4.98			100		80-120		
Bromodichloromethane	5.00	4.81			96		73-124		
Bromoform	5.00	4.54			91		49-144		
Bromomethane	5.00	4.55			91		60-136		
2-Butanone	37.5	37.11			99		59-141		
Carbon Disulfide	5.00	4.47			89		67-130		
Carbon Tetrachloride	5.00	4.58			92		64-141		
Chlorobenzene	5.00	4.93			99		80-120		
Chloroethane	5.00	4.79			96		63-120		
Chloroform	5.00	4.86			97		80-120		
Chloromethane	5.00	4.48			90		56-124		
Dibromochloromethane	5.00	4.85			97		64-138		
1,1-Dichloroethane	5.00	4.98			100		74-120		
1,2-Dichloroethane	5.00	4.64			93		69-122		
1,1-Dichloroethene	5.00	4.70			94		80-131		
cis-1,2-Dichloroethene	5.00	5.17			103		80-122		
trans-1,2-Dichloroethene	5.00	4.74			95		80-122		
1,2-Dichloropropane	5.00	5.35			107		80-120		
cis-1,3-Dichloropropene	5.00	4.91			98		67-121		
trans-1,3-Dichloropropene	5.00	4.60			92		61-129		
Ethylbenzene	5.00	4.66			93		80-120		
2-Hexanone	25	24.92			100		52-140		
4-Methyl-2-pentanone	25	24.72			99		55-140		
Methylene Chloride	5.00	4.91			98		80-120		
Styrene	5.00	4.85			97		80-120		
1,1,2,2-Tetrachloroethane	5.00	5.01			100		75-123		
Tetrachloroethene	5.00	4.89			98		80-120		
Toluene	5.00	4.83			97		80-120		
112Trichloro122Trifluoroethane	5.00	4.77			95		75-133		
1,1,1-Trichloroethane	5.00	4.43			89		78-126		
1,1,2-Trichloroethane	5.00	5.09			102		80-120		
Trichloroethene	5.00	4.90			98		80-120		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 03/13/2020 03:07

Group Number: 2089909

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Trichlorofluoromethane	5.00	4.90			98		62-136		
Vinyl Acetate	12.5	12.38			99		38-145		
Vinyl Chloride	5.00	4.46			89		60-125		
m+p-Xylene	10	9.74			97		80-120		
o-Xylene	5.00	4.77			95		80-120		
	ug/l	**ug/l**	**ug/l**	**ug/l**					
Batch number: 200630002A	Sample number(s): 1269082								
Acetylene	51.25	58.04	51.25	52.4	113	102	57-146	10	20
Ethane	59.39	61.09	59.39	60.27	103	101	85-115	1	20
Ethene	60.4	61.84	60.4	60.97	102	101	83-115	1	20
Methane	59.42	62.07	59.42	61	104	103	85-115	2	20
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20059720213A	Sample number(s): 1269082								
Nitrate Nitrogen	0.750	0.722			96		90-110		
Sulfate	7.50	7.14			95		90-110		
Batch number: 20060304501B	Sample number(s): 1269082								
Total Organic Carbon	25	26.6			106		91-113		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 20059720213A	Sample number(s): 1269082 UNSPK: 1269082									
Nitrate Nitrogen	0.157	1.00	1.26			110		90-110		
Sulfate	0.601	10	11.58			110		90-110		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 20059720213A	Sample number(s): 1269082 BKG: 1269082			

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 03/13/2020 03:07

Group Number: 2089909

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Nitrate Nitrogen	0.157	0.159	1 (1)	15
Sulfate	0.601	0.547	9 (1)	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: H200621AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1269082	103	129*	97	100
1269082DL	98	100	99	98
1269083	97	100	99	98
1269083DL	97	100	99	98
1269084	98	102	99	96
Blank	98	105	100	95
LCS	97	102	100	96
LCSD	98	103	100	97
Limits:	80-120	80-120	80-120	80-120

Analysis Name: 8260C Boeing 38
Batch number: H200652AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1269082	101	106	91	94
1269082RE	101	106	91	94
1269083DLRE	99	102	98	97
Blank	99	104	98	94
LCS	99	106	98	96
Limits:	80-120	80-120	80-120	80-120

Analysis Name: AMEE by RSK-175
Batch number: 200630002A

	Propene
1269082	66
1269082DL	94
Blank	101
LCS	100
LCSD	97

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Quality Control Summary

Client Name: The Boeing Company Group Number: 2089909
Reported: 03/13/2020 03:07

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: AMEE by RSK-175
Batch number: 200630002A

Limits: 46-135

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 13419 For Eurofins Lancaster Laboratories Environmental use only Group # 2049909 Sample # 1269082-84

Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Gresham, Oregon
Site Project: Boeing of Portland
Site Program/#: 0025116.120.412
Boeing PM: Debbie Taege
Consultant Contact: Chris Kimmel
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: VOC (38 list)	TOC	Nitrate	Sulfate	AMEE								(5) Remarks/Comments
E-11-0220	2/27/20	920	H_2O	9	X	X	X	X	X								
BOP-87-0220	2/27/20	1000	↓	3	X												
Trip Blank	—	—	H_2O	1	X												

Page 21 of 24

(6) Turnaround Time Requested (please circle)

Standard 5 day 4 day
72 hour 48 hour 24 hour
Date needed: _____

		(7)
Relinquished by: W. Kemple	Date/Time 2/27 1:15	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: Chi Wells	Date/Time 2/28/20 10:28
Relinquished by commercial carrier (circle): UPS FedEx Other:		Temperature upon Receipt: 1.5 °C	
		Custody Seals Intact?: Yes No	

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.

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 277130

Group Number(s): 2489909

Client: BOEING GRESHAM OREGON

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Date:	02/28/2020
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	1
Samples Chilled:	Yes	Trip Blank Type:	HCl
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Julissa Rivera-Santa

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	46730060WS	1.5	IR	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

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

Tests 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.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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. 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. 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.

eurofins | Lancaster Laboratories Environmental

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Second Quarter 2020

Technical Memorandum

TO: Evelyn Ives, Project Manager

FROM: Kristi Schultz and Danille Jorgensen

DATE: June 12, 2020

RE: **Boeing Portland Troutdale Gravel Aquifer (TGA)**
Second Quarter 2020 Groundwater Quality Sampling
Laboratory Data Quality Evaluation

This technical memorandum provides the results of a focused data validation associated with 25 groundwater samples, 3 field duplicates, and 4 trip blanks collected during the second quarter 2020 TGA sampling event at Boeing Portland. Samples were analyzed by Eurofins Lancaster Laboratories Environmental (ELLE), located in Lancaster, Pennsylvania. This data quality evaluation covers ELLE data packages 2098561, 2098562, 2099064, and 2099202. Samples submitted to ELLE were analyzed for volatile organic compounds ([VOCs], US Environmental Protection Agency [EPA] Method SW8260C); conventional inorganic parameters including N-Nitrate, N-Nitrite, and sulfate (EPA Method 300.0); sulfide (EPA Method 376.1); total and dissolved iron (EPA Method 6010C); N-Ammonia (Method SM 4500 NH3D-2011); total organic carbon (Method SM 5310 C-2011); diesel- and motor oil-range petroleum hydrocarbons (Oregon Department of Environmental Quality [ODEQ]-approved Method NWTPH-Dx); and methane, ethane, ethane, and acetylene (MEEA; Modified RSK 175).

The verification and validation check was conducted with guidance from applicable portions of EPA's *National Functional Guidelines for Organic Data Review* (EPA 2016b) and the *National Functional Guidelines for Inorganic Data Review* (EPA 2016a). Landau Associates, Inc. (LAI) performed an EPA-equivalent Level IIA verification and validation check on each laboratory data package, which included the following:

- Verification that the laboratory data package contained all necessary documentation (including chain-of-custody record (COCs); identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at the laboratory; date and time of sample analysis; explanation of any significant corrective actions taken by the laboratory during the analytical process; and, if applicable, date of extraction, definition of laboratory data qualifiers, all sample-related quality control data, and quality control acceptance criteria).
- Verification that all requested analyses, special cleanups, and special handling methods were performed.
- Evaluation of sample holding times.
- Evaluation of quality control data compared to acceptance criteria, including method blanks, surrogate recoveries, matrix spike results, laboratory duplicate and/or replicate results, and laboratory control sample results.
- Evaluation of overall data quality and completeness of analytical data.

Data validation qualifiers are added to the sample results, as appropriate, based on the verification and validation check. The absence of a data qualifier indicates that the reported result is acceptable

without qualification. The data quality evaluation is summarized below. Data qualifiers are summarized in Table 1.

Chain-of-Custody Records

A signed COC record was attached to the data packages. The laboratory received all samples in good condition. All analyses were performed as requested, with the following exceptions:

- Two sulfate results were reported for samples DP1-0520 in data package 2098562, E-6-0520 and LAI-8-0520in data package 2099064, and BOP-09i-0520 in data package 2099202 due to an inadvertent initial analysis at the incorrect dilution factor. The original sample results were qualified as "do not report" (DNR), as indicated in Table 1.

No special cleanups or handling methods were requested.

Upon receipt by LLI, the sample container information was compared to the associated chain-of-custody and the cooler temperatures were recorded. The coolers were received with temperatures within the EPA-recommended limit of ≤6°C. No qualification of the data was necessary.

Holding Times

For all analyses and all samples, the time between sample collection, extraction (if applicable), and analysis was determined to be within EPA- and project-specified holding times, with the following, exceptions:

- Per the data package 2098561 case narrative, sample TowerEff-0520 was initially analyzed for nitrite within the method-recommended hold time. However, the analysis was conducted at the incorrect dilution factor. The sample was reanalyzed outside the method-recommended hold time at the correct dilution factor. The reanalysis result was qualified as "do not report" (DNR), as indicated in Table 1.
- Per the data package 2098561 case narrative, sample TowerEff-0520 was initially analyzed for nitrate within the method-recommended hold time. However, the analysis was conducted at the incorrect dilution factor. The sample was reanalyzed outside the method-recommended hold time at the same dilution factor. The reanalysis result was qualified as "do not report" (DNR), as indicated in Table 1.
- Per the data package 2098562 case narrative, samples E-4-0520, E-15-0520, and E-16-0520 were initially analyzed for nitrate within the method-recommended hold time. However, the analysis was conducted at the incorrect dilution factor. Samples were reanalyzed outside the method-recommended hold time at the same dilution factor. The samples were reanalyzed again outside the method-recommended hold time at the correct dilution factor. The reanalysis results were qualified as "do not report" (DNR), as indicated in Table 1.
- Per the data package 2099064 case narrative, sample LAI-8-0520 was initially analyzed for nitrate within the method-recommended hold time. However, the analysis was conducted at the incorrect dilution factor. The sample was reanalyzed outside the method-recommended hold time at the correct dilution factor. The reanalysis result was qualified as "do not report" (DNR), as indicated in Table 1.

- Per the data package 2099202 case narrative, several samples were initially analyzed for nitrate within the method-recommended hold time. However, the analysis was conducted at the incorrect dilution factor. The samples were reanalyzed outside the method-recommended hold time at the correct dilution factor. The reanalysis results were qualified as "do not report" (DNR), as indicated in Table 1.
- Per the data package 2099202 case narrative, sample BOP-74i-0520 was initially analyzed for nitrate within the method-recommended hold time. However, the analysis was conducted at the incorrect dilution factor. The sample was reanalyzed outside the method-recommended hold time at the correct dilution factor. Because the initial analysis result was non-detect, and the reanalysis result was a detection, the original analysis result was qualified as "do not report" (DNR), and the reanalysis result was qualified as estimated (J), as indicated in Table 1.
- Per the data package 2099064 case narrative, preserved vials were submitted for the MEEA analysis for sample E-7-0520; however, the pH at the time of analysis was 4. The higher pH decreased the hold time to 7 days; the sample was analyzed within the shortened hold time; no qualification of the data was necessary.

Blank Results

Laboratory Method Blanks

At least one method blank was analyzed with each batch of samples for analysis. Target analytes were not detected at concentrations greater than the reporting limits in the associated method blanks. No qualification of the data was necessary.

Field Trip Blanks and Field Equipment Blanks

Four trip blanks were submitted to the laboratory for VOC analysis with the sample batches. Target analytes were not detected at concentrations greater than the reporting limits in the trip blanks. No qualification of the data was necessary.

No field equipment blanks were submitted for analysis with these sample batches.

Surrogate Recoveries

Appropriate compounds were used as surrogate spikes for the organics analyses. Recovery values for the surrogate spikes were within the current laboratory-specified control limits for all project samples, with the following exceptions:

- Recoveries of the surrogate propene associated with the MEEA initial and reanalysis of sample E-7-0520 in data package 2099064 were greater than the laboratory-specified control limits. The reanalysis results were qualified as "do not report" (DNR), as indicated in Table 1. The reported detections from the initial analysis were qualified as estimated (J), as indicated in Table 1.
- Recovery of the surrogate o-terphenyl associated with the diesel- and motor oil-range petroleum hydrocarbons analysis of sample E-7-0520 in data package 2099064 was greater than the laboratory-specified control limits. The associated detected concentrations were qualified as estimated (J), as indicated in Table 1.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) and Laboratory Replicate Results

At least one MS and/or laboratory replicate sample were analyzed with the conventional and/or metals parameters in data packages 2098561, 2099064, and 2099202. The recovery values for each required spiking compound and/or the relative percent differences (RPDs) between the laboratory replicate results were within the current project-specified and/or laboratory-specified control limits for all project samples with the following exceptions:

- The MS recovery for nitrite associated with the conventionals analysis of sample TowerEff-0520 in data package 2098561 was greater than the laboratory-specified control limits. Nitrite was not detected at a concentration greater than the reporting limit in the associated sample; therefore, no qualification of the data was necessary.
- The MS recovery for sulfate associated with the conventionals analysis of sample TowerEff-0520 in data package 2098561 was less than the laboratory-specified control limits. The associated sample result was qualified as estimated (J, UJ), as indicated in Table 1.
- The MS recovery for nitrate associated with the conventionals analysis of sample BOP-73i-0520 in data package 2099202 was greater than the laboratory-specified control limits. Nitrate was not detected at a concentration greater than the reporting limit in the associated sample; therefore, no qualification of the data was necessary.

Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD) Results

At least one laboratory control sample and/or laboratory control sample duplicate (LCS/LCSD) was analyzed with each batch of samples for analysis. Recoveries and RPDs for the laboratory control samples and associated duplicates were within the current laboratory-specified control limits. No qualification of the data was necessary.

Blind Field Duplicate Results

As specified in the QAPP, blind field duplicate samples were collected at a rate of one blind field duplicate sample per 20 samples, but not less than one blind field duplicate per sampling round. Four pairs of blind field duplicate water samples (TowerInf-0520/TowerInD-0520, TowerEff-0520/TowerEfD-0520, and BOP-W-0520/E-4-0520) were submitted for analysis with data packages 2098561 and 2098562.

A project-specified control limit of 20 percent was used to evaluate the RPDs between the duplicate samples except when the sample results were within five times the reporting limit. In these cases, a project-specified control limit of plus or minus the reporting limit was used. RPDs for the duplicate sample pairs submitted for analysis were within the project-specified control limits. No qualification of the data was necessary.

Total and Dissolved Metals Concentrations

The analytical results for total and dissolved metals were compared for each project sample. A project-specified control limit of 20 percent was used to evaluate the RPDs between the total and

dissolved metals results, except when the sample results were within five times the reporting limit. In these cases, a project-specified control limit of plus or minus the reporting limit was used. The RPDs between the total and dissolved metals results were within the project-specified control limits for all project samples. No qualification of the data was necessary.

Quantitation Limits

Project-specified quantitation limits were met for all samples except for instances where dilution was performed due to the presence of high level target species or sample matrix interference.

In those instances when an analysis result exceeded the linear range of the instrument, the laboratory appended an "E" flag to the data and reported a subsequent dilution analysis. For those samples, the "E" flagged result is qualified as "DNR" for Do Not Report, and the dilution analysis result is reported for that specific compound. For all other results, the original analysis results are reported because of the lower reporting limits, so the corresponding dilution analysis results are qualified as "DNR".

Audit/Corrective Action Records

No corrective action records were generated for these sample batches. Based on the laboratory's case narratives, continuing calibration verification (CCV) recovery results were within laboratory-specified control limits, with the following exceptions:

- The CCV recovery was high for acetylene associated with the AMEE analysis of multiple samples in data packages 2098562, 2099064, and 2099202. Acetylene was not detected in the associated samples at concentrations greater than the laboratory reporting limits. No qualification of the data was necessary.

The laboratory also noted the following:

- The case narrative indicated the internal standard recovery associated with the VOC analysis of sample BOP-W-0520 was less than the laboratory-specified control limits. The initial analytical results were qualified as estimated (J+, UJ), as indicated in Table 1.
- The case narrative indicated for several samples in data package 2099064, the reported acetone results from the initial VOC analysis was an estimated maximum possible concentration due to interference from a non-target compound. The associated reported results were qualified as estimated (J), as indicated in Table 1.

Completeness and Overall Data Quality

The completeness for this data set is 100 percent, which meets the project-specified goal of 90 percent minimum.

Data precision was evaluated through laboratory control sample duplicates, laboratory duplicates, matrix spike duplicates, and blind field duplicates. Data accuracy was evaluated through laboratory control samples, matrix spikes, and surrogate spikes. No data were rejected.

LANDAU ASSOCIATES, INC.



Kristi Schultz
Data Specialist



Danille Jorgensen
Environmental Data Manager
DRJ/kes
[P:\025\116\FILERM\T\TGA\DATA\DV MEMOS TGA\2020\2Q20\TGA 2Q20 TM.DOCX]

Attachments

Table 1. Summary of Data Qualifiers

References

EPA. 2016a. National Functional Guidelines for Inorganic Superfund Methods Data Review. edited by Office of Superfund Remediation and Technology Innovation (OSRTI). Washington, DC: US Environmental Protection Agency.

EPA. 2016b. National Functional Guidelines for Superfund Organic Methods Data Review. edited by Office of Superfund Remediation and Technology Innovation (OSRTI). Washington, DC: US Environmental Protection Agency.

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
2098561	TowerEff-0520	Sulfate	12.5		J	Low matrix spike recovery
2098561	TowerEff-0520	Nitrite Nitrogen	0.10	U	DNR	Do not report; use original analysis result
2098561	TowerEff-0520	Nitrate Nitrogen	1.50		DNR	Do not report; use original analysis result
2098562	E-15-0520 (orig)	Methane	7800	E	DNR	Do not report; use dilution analysis result
2098562	E-15-0520 (RE)	Acetylene	250	U	DNR	Do not report; use original analysis result
2098562	E-15-0520 (RE)	Ethane	250	U	DNR	Do not report; use original analysis result
2098562	E-15-0520 (RE)	Ethene	250	U	DNR	Do not report; use original analysis result
2098562	E-16-0520 (orig)	Methane	6400	E	DNR	Do not report; use dilution analysis result
2098562	E-16-0520 (RE)	Acetylene	250	U	DNR	Do not report; use original analysis result
2098562	E-16-0520 (RE)	Ethane	250	U	DNR	Do not report; use original analysis result
2098562	E-16-0520 (RE)	Ethene	250	U	DNR	Do not report; use original analysis result
2098562	DP1-0520 (orig)	Methane	18000	E	DNR	Do not report; use dilution analysis result
2098562	DP1-0520 (RE)	Acetylene	500	U	DNR	Do not report; use original analysis result
2098562	DP1-0520 (RE)	Ethane	500	U	DNR	Do not report; use original analysis result
2098562	DP1-0520 (RE)	Ethene	500	U	DNR	Do not report; use original analysis result
2098562	DP1-0520	Sulfate	5.0	U	DNR	Do not report; use dilution analysis result
2098562	E-15-0520 (5x DF RE)	Nitrate	0.50	U	DNR	Do not report; use original analysis result
2098562	E-15-0520 (1x DF RE)	Nitrate	0.10	U	DNR	Do not report; use original analysis result
2098562	E-16-0520 (5x DF RE)	Nitrate	0.50	U	DNR	Do not report; use original analysis result
2098562	E-16-0520 (1x DF RE)	Nitrate	0.10	U	DNR	Do not report; use original analysis result
2098562	E-4-0520 (5x DF RE)	Nitrate	0.82		DNR	Do not report; use original analysis result
2098562	E-4-0520 (1x DF RE)	Nitrate	0.54		DNR	Do not report; use original analysis result
2098562	BOP-W-0520	Acetone	5.0	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Benzene	0.2	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Bromodichloromethane	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Bromoform	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Bromomethane	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	2-Butanone	5.0	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Carbon Disulfide	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Carbon Tetrachloride	0.2	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Chlorobenzene	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Chloroethane	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Chloroform	0.2	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Chloromethane	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Dibromochloromethane	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	1,1-Dichloroethane	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	1,2-Dichloroethane	0.2	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	1,1-Dichloroethene	3.3		J+	Internal standard recovery outside criteria
2098562	BOP-W-0520	cis-1,2-Dichloroethene	2.0		J+	Internal standard recovery outside criteria
2098562	BOP-W-0520	trans-1,2-Dichloroethene	0.2	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	1,2-Dichloropropane	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	cis-1,3-Dichloropropene	0.2	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	trans-1,3-Dichloropropene	0.2	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Ethylbenzene	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	2-Hexanone	5.0	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	4-Methyl-2-pentanone	5.0	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Methylene Chloride	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Styrene	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	1,1,2,2-Tetrachloroethane	0.2	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Tetrachloroethene	0.7		J+	Internal standard recovery outside criteria
2098562	BOP-W-0520	Toluene	0.2	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	1,1,2-Trichloro-1,2,2-trifluoroethane	0.5		J+	Internal standard recovery outside criteria
2098562	BOP-W-0520	1,1,1-Trichloroethane	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	1,1,2-Trichloroethane	0.2	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Trichloroethene	20		J+	Internal standard recovery outside criteria
2098562	BOP-W-0520	Trichlorofluoromethane	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Vinyl Acetate	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	Vinyl Chloride	0.2	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	m,p-Xylene	0.5	U	UJ	Internal standard recovery outside criteria
2098562	BOP-W-0520	o-Xylene	0.5	U	UJ	Internal standard recovery outside criteria
2099064	BOP-84i-0520 (orig)	2-Butanone	270	E	DNR	Do not report; use dilution analysis result
2099064	BOP-84i-0520 (orig)	Acetone	98		J	Estimated maximum possible concentration due to non-target compound interference
2099064	BOP-84i-0520 (DL)	Acetone	50	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Benzene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Bromodichloromethane	5.0	U	DNR	Do not report; use original analysis result

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
2099064	BOP-84i-0520 (DL)	Bromoform	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Bromomethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Carbon Disulfide	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Carbon Tetrachloride	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Chlorobenzene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Chloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Chloroform	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Chloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Dibromochloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	1,1-Dichloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	1,2-Dichloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	1,1-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	cis-1,2-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	trans-1,2-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	1,2-Dichloropropane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	cis-1,3-Dichloropropene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	trans-1,3-Dichloropropene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Ethylbenzene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	2-Hexanone	50	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	4-Methyl-2-pentanone	50	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Methylene Chloride	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Styrene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	1,1,2,2-Tetrachloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Tetrachloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Toluene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	1,1,1-Trichloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	1,1,2-Trichloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Trichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Trichlorofluoromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Vinyl Acetate	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	Vinyl Chloride	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	m,p-Xylene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-84i-0520 (DL)	o-Xylene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (orig)	2-Butanone	940	E	DNR	Do not report; use dilution analysis result
2099064	BOP-85i-0520 (orig)	Acetone	190		J	Estimated maximum possible concentration due to non-target compound interference
2099064	BOP-85i-0520 (DL)	Acetone	200		DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Benzene	4.2		DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Bromodichloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Bromoform	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Bromomethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Carbon Disulfide	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Carbon Tetrachloride	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Chlorobenzene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Chloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Chloroform	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Chloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Dibromochloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	1,1-Dichloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	1,2-Dichloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	1,1-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	cis-1,2-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	trans-1,2-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	1,2-Dichloropropane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	cis-1,3-Dichloropropene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	trans-1,3-Dichloropropene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Ethylbenzene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	2-Hexanone	50	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	4-Methyl-2-pentanone	50	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Methylene Chloride	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Styrene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	1,1,2,2-Tetrachloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Tetrachloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Toluene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	1,1,1-Trichloroethane	5.0	U	DNR	Do not report; use original analysis result

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
2099064	BOP-85i-0520 (DL)	1,1,2-Trichloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Trichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Trichlorofluoromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Vinyl Acetate	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	Vinyl Chloride	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	m,p-Xylene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-85i-0520 (DL)	o-Xylene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (orig)	2-Butanone	610	E	DNR	Do not report; use dilution analysis result
2099064	BOP-86i-0520 (orig)	Acetone	230		J	Estimated maximum possible concentration due to non-target compound interference
2099064	BOP-86i-0520 (DL)	Acetone	180		DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Benzene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Bromodichloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Bromoform	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Bromomethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Carbon Disulfide	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Carbon Tetrachloride	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Chlorobenzene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Chloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Chloroform	3.8		DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Chloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Dibromochloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	1,1-Dichloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	1,2-Dichloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	1,1-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	cis-1,2-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	trans-1,2-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	1,2-Dichloropropane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	cis-1,3-Dichloropropene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	trans-1,3-Dichloropropene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Ethylbenzene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	2-Hexanone	50	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	4-Methyl-2-pentanone	50	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Methylene Chloride	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Styrene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	1,1,2,2-Tetrachloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Tetrachloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Toluene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	1,1,1-Trichloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	1,1,2-Trichloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Trichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Trichlorofluoromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Vinyl Acetate	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	Vinyl Chloride	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	m,p-Xylene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-86i-0520 (DL)	o-Xylene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (orig)	2-Butanone	300	E	DNR	Do not report; use dilution analysis result
2099064	BOP-87i-0520 (orig)	Vinyl Chloride	95	E	DNR	Do not report; use dilution analysis result
2099064	BOP-87i-0520 (orig)	Acetone	110		J	Estimated maximum possible concentration due to non-target compound interference
2099064	BOP-87i-0520 (DL)	Acetone	120		DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Benzene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Bromodichloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Bromoform	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Bromomethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Carbon Disulfide	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Carbon Tetrachloride	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Chlorobenzene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Chloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Chloroform	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Chloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Dibromochloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	1,1-Dichloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	1,2-Dichloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	1,1-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	cis-1,2-Dichloroethene	4.6		DNR	Do not report; use original analysis result

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
2099064	BOP-87i-0520 (DL)	trans-1,2-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	1,2-Dichloropropane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	cis-1,3-Dichloropropene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	trans-1,3-Dichloropropene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Ethylbenzene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	2-Hexanone	50	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	4-Methyl-2-pentanone	50	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Methylene Chloride	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Styrene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	1,1,2,2-Tetrachloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Tetrachloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Toluene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	1,1,1-Trichloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	1,1,2-Trichloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Trichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Trichlorofluoromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	Vinyl Acetate	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	m,p-Xylene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-87i-0520 (DL)	o-Xylene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (orig)	Trichloroethene	31	E	DNR	Do not report; use dilution analysis result
2099064	BOP-10i-0520 (DL)	Acetone	50	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Benzene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Bromodichloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Bromoform	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Bromomethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	2-Butanone	160		DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Carbon Disulfide	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Carbon Tetrachloride	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Chlorobenzene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Chloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Chloroform	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Chloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Dibromochloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	1,1-Dichloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	1,2-Dichloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	1,1-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	cis-1,2-Dichloroethene	12		DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	trans-1,2-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	1,2-Dichloropropane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	cis-1,3-Dichloropropene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	trans-1,3-Dichloropropene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Ethylbenzene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	2-Hexanone	50	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	4-Methyl-2-pentanone	50	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Methylene Chloride	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Styrene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	1,1,2,2-Tetrachloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Tetrachloroethene	5.6		DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Toluene	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	1,1,1-Trichloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	1,1,2-Trichloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Trichlorofluoromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Vinyl Acetate	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Vinyl Chloride	2.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	m,p-Xylene	5.0	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	o-Xylene	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (orig)	Vinyl Chloride	120	E	DNR	Do not report; use dilution analysis result
2099064	E-6-0520 (DL)	Acetone	50	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Benzene	2.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Bromodichloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Bromoform	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Bromomethane	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	2-Butanone	50	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Carbon Disulfide	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Carbon Tetrachloride	2.0	U	DNR	Do not report; use original analysis result

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
2099064	E-6-0520 (DL)	Chlorobenzene	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Chloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Chloroform	2.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Chloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Dibromochloromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	1,1-Dichloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	1,2-Dichloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	1,1-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	cis-1,2-Dichloroethene	9.0		DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	trans-1,2-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	1,2-Dichloropropane	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	cis-1,3-Dichloropropene	2.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	trans-1,3-Dichloropropene	2.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Ethylbenzene	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	2-Hexanone	50	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	4-Methyl-2-pentanone	50	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Methylene Chloride	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Styrene	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	1,1,2,2-Tetrachloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Tetrachloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Toluene	2.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	1,1,1-Trichloroethane	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	1,1,2-Trichloroethane	2.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Trichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Trichlorofluoromethane	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Vinyl Acetate	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	m,p-Xylene	5.0	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	o-Xylene	5.0	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (orig)	2-Butanone	4000	E	DNR	Do not report; use dilution analysis result
2099064	E-7-0520 (orig)	Acetone	90		J	Estimated maximum possible concentration due to non-target compound interference
2099064	E-7-0520 (DL)	Acetone	500	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Benzene	20	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Bromodichloromethane	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Bromoform	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Bromomethane	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Carbon Disulfide	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Carbon Tetrachloride	20	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Chlorobenzene	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Chloroethane	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Chloroform	20	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Chloromethane	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Dibromochloromethane	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	1,1-Dichloroethane	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	1,2-Dichloroethane	20	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	1,1-Dichloroethene	20	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	cis-1,2-Dichloroethene	23		DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	trans-1,2-Dichloroethene	20	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	1,2-Dichloropropane	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	cis-1,3-Dichloropropene	20	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	trans-1,3-Dichloropropene	20	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Ethylbenzene	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	2-Hexanone	500	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	4-Methyl-2-pentanone	500	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Methylene Chloride	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Styrene	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	1,1,2,2-Tetrachloroethane	20	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Tetrachloroethene	20	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Toluene	20	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	1,1,2-Trichloro-1,2,2-trifluoroethane	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	1,1,1-Trichloroethane	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	1,1,2-Trichloroethane	20	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Trichloroethene	27		DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Trichlorofluoromethane	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Vinyl Acetate	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Vinyl Chloride	20	U	DNR	Do not report; use original analysis result

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
2099064	E-7-0520 (DL)	m,p-Xylene	50	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	o-Xylene	50	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (orig)	Methane	7900	E	DNR	Do not report; use dilution analysis result
2099064	BOP-10i-0520 (DL)	Acetylene	500	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Ethane	500	U	DNR	Do not report; use original analysis result
2099064	BOP-10i-0520 (DL)	Ethene	500	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (orig)	Methane	2700	E	DNR	Do not report; use dilution analysis result
2099064	E-6-0520 (DL)	Acetylene	100	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Ethane	100	U	DNR	Do not report; use original analysis result
2099064	E-6-0520 (DL)	Ethene	100	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (orig)	Methane	10000	E	DNR	Do not report; use dilution analysis result
2099064	E-7-0520 (orig)	Ethene	6.0		J	High surrogate recovery
2099064	E-7-0520 (DL)	Acetylene	1000	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Ethane	1000	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (DL)	Ethene	1000	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (RE)	Methane	15000	E	DNR	Do not report; use dilution analysis result
2099064	E-7-0520 (RE)	Acetylene	5.0	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (RE)	Ethane	5.0	U	DNR	Do not report; use original analysis result
2099064	E-7-0520 (RE)	Ethene	7.5		DNR	Do not report; use original analysis result
2099064	LAI-8-0520	Nitrate Nitrogen	0.1	U	DNR	Do not report; use original analysis result
2099064	LAI-8-0520	Sulfate	5.0	U	DNR	Do not report; use dilution analysis result
2099064	E-6-0520	Sulfate	5.0	U	DNR	Do not report; use dilution analysis result
2099064	LAI-8-0520	Diesel/#2 Fuel w/ Si Gel	310		J	High surrogate recovery
2099064	LAI-8-0520	DRO C12-C24 w/ Si Gel	250		J	High surrogate recovery
2099064	LAI-8-0520	Motor Oil w/ Si Gel	400		J	High surrogate recovery
2099202	BOP-09i-0520 (orig)	2-Butanone	380	E	DNR	Do not report; use dilution analysis result
2099202	BOP-09i-0520 (orig)	Toluene	130	E	DNR	Do not report; use dilution analysis result
2099202	BOP-09i-0520 (DL)	Acetone	100	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Benzene	4.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Bromodichloromethane	10.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Bromoform	10.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Bromomethane	10.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Carbon Disulfide	10.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Carbon Tetrachloride	4.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Chlorobenzene	10.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Chloroethane	10	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Chloroform	4.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Chloromethane	10	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Dibromochloromethane	10	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	1,1-Dichloroethane	10	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	1,2-Dichloroethane	4.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	1,1-Dichloroethene	4.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	cis-1,2-Dichloroethene	4.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	trans-1,2-Dichloroethene	4.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	1,2-Dichloropropane	10	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	cis-1,3-Dichloropropene	4.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	trans-1,3-Dichloropropene	4.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Ethylbenzene	10.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	2-Hexanone	100	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	4-Methyl-2-pentanone	100	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Methylene Chloride	10.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Styrene	10.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	1,1,2,2-Tetrachloroethane	4.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Tetrachloroethene	4.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	1,1,1-Trichloroethane	10	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	1,1,2-Trichloroethane	4.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Trichloroethene	4.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Trichlorofluoromethane	10.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Vinyl Acetate	10.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Vinyl Chloride	4.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	m,p-Xylene	10	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	o-Xylene	10	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (orig)	cis-1,2-Dichloroethene	1700	E	DNR	Do not report; use dilution analysis result
2099202	BOP-73i-0520 (orig)	Vinyl Chloride	1300	E	DNR	Do not report; use dilution analysis result
2099202	BOP-73i-0520 (DL)	Acetone	1000	U	DNR	Do not report; use original analysis result

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
2099202	BOP-73i-0520 (DL)	Benzene	40.0	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Bromodichloromethane	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Bromoform	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Bromomethane	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	2-Butanone	1000	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Carbon Disulfide	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Carbon Tetrachloride	40.0	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Chlorobenzene	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Chloroethane	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Chloroform	40.0	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Chloromethane	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Dibromochloromethane	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	1,1-Dichloroethane	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	1,2-Dichloroethane	40	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	1,1-Dichloroethene	40	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	trans-1,2-Dichloroethene	47		DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	1,2-Dichloropropane	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	cis-1,3-Dichloropropene	40	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	trans-1,3-Dichloropropene	40	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Ethylbenzene	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	2-Hexanone	1000	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	4-Methyl-2-pentanone	1000	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Methylene Chloride	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Styrene	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	1,1,2,2-Tetrachloroethane	40	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Tetrachloroethene	40	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Toluene	40	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	1,1,2-Trichloro-1,2,2-trifluoroethane	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	1,1,1-Trichloroethane	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	1,1,2-Trichloroethane	40	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Trichloroethene	40	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Trichlorofluoromethane	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Vinyl Acetate	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	m,p-Xylene	100	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	o-Xylene	100	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (orig)	Toluene	100	E	DNR	Do not report; use dilution analysis result
2099202	BOP-77i-0520 (DL)	Acetone	51		DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Benzene	2.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Bromodichloromethane	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Bromoform	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Bromomethane	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	2-Butanone	50	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Carbon Disulfide	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Carbon Tetrachloride	2.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Chlorobenzene	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Chloroethane	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Chloroform	2.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Chloromethane	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Dibromochloromethane	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	1,1-Dichloroethane	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	1,2-Dichloroethane	2.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	1,1-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	cis-1,2-Dichloroethene	16		DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	trans-1,2-Dichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	1,2-Dichloropropane	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	cis-1,3-Dichloropropene	2.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	trans-1,3-Dichloropropene	2.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Ethylbenzene	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	2-Hexanone	50	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	4-Methyl-2-pentanone	50	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Methylene Chloride	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Styrene	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	1,1,2,2-Tetrachloroethane	2.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Tetrachloroethene	2.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	1,1,1-Trichloroethane	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	1,1,2-Trichloroethane	2.0	U	DNR	Do not report; use original analysis result

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
2099202	BOP-77i-0520 (DL)	Trichloroethene	2.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Trichlorofluoromethane	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Vinyl Acetate	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Vinyl Chloride	8.6		DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	m,p-Xylene	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	o-Xylene	5.0	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (orig)	Methane	21000	E	DNR	Do not report; use dilution analysis result
2099202	BOP-09i-0520 (DL)	Acetylene	1000	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Ethane	1000	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (DL)	Ethene	1000	U	DNR	Do not report; use original analysis result
2099202	BOP-72i-0520 (orig)	Methane	13000	E	DNR	Do not report; use dilution analysis result
2099202	BOP-72i-0520 (DL)	Acetylene	500	U	DNR	Do not report; use original analysis result
2099202	BOP-72i-0520 (DL)	Ethane	500	U	DNR	Do not report; use original analysis result
2099202	BOP-72i-0520 (DL)	Ethene	500	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (orig)	Methane	11000	E	DNR	Do not report; use dilution analysis result
2099202	BOP-73i-0520 (orig)	Ethene	1900	E	DNR	Do not report; use dilution analysis result
2099202	BOP-73i-0520 (DL)	Acetylene	500	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (DL)	Ethane	500	U	DNR	Do not report; use original analysis result
2099202	BOP-74i-0520 (orig)	Methane	15000	E	DNR	Do not report; use dilution analysis result
2099202	BOP-74i-0520 (DL)	Acetylene	1000	U	DNR	Do not report; use original analysis result
2099202	BOP-74i-0520 (DL)	Ethane	1000	U	DNR	Do not report; use original analysis result
2099202	BOP-74i-0520 (DL)	Ethene	1000	U	DNR	Do not report; use original analysis result
2099202	BOP-75i-0520 (orig)	Methane	14000	E	DNR	Do not report; use dilution analysis result
2099202	BOP-75i-0520 (DL)	Acetylene	500	U	DNR	Do not report; use original analysis result
2099202	BOP-75i-0520 (DL)	Ethane	500	U	DNR	Do not report; use original analysis result
2099202	BOP-75i-0520 (DL)	Ethene	500	U	DNR	Do not report; use original analysis result
2099202	BOP-76i-0520 (orig)	Methane	12000	E	DNR	Do not report; use dilution analysis result
2099202	BOP-76i-0520 (DL)	Acetylene	500	U	DNR	Do not report; use original analysis result
2099202	BOP-76i-0520 (DL)	Ethane	500	U	DNR	Do not report; use original analysis result
2099202	BOP-76i-0520 (DL)	Ethene	500	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (orig)	Methane	11000	E	DNR	Do not report; use dilution analysis result
2099202	BOP-77i-0520 (DL)	Acetylene	500	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Ethane	500	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (DL)	Ethene	500	U	DNR	Do not report; use original analysis result
2099202	BOP-09i-0520 (orig)	Sulfate	5.0	U	DNR	Do not report; use dilution analysis result
2099202	BOP-72i-0520 (RE)	Nitrate Nitrogen	0.10	U	DNR	Do not report; use original analysis result
2099202	BOP-73i-0520 (RE)	Nitrate Nitrogen	0.10	U	DNR	Do not report; use original analysis result
2099202	BOP-74i-0520 (orig)	Nitrate Nitrogen	0.50	U	DNR	Do not report; use dilution analysis result
2099202	BOP-74i-0520 (RE)	Nitrate Nitrogen	0.38		J	Analyzed outside hold time
2099202	BOP-75i-0520 (RE)	Nitrate Nitrogen	0.10	U	DNR	Do not report; use original analysis result
2099202	BOP-76i-0520 (RE)	Nitrate Nitrogen	0.10	U	DNR	Do not report; use original analysis result
2099202	BOP-77i-0520 (RE)	Nitrate Nitrogen	0.10	U	DNR	Do not report; use original analysis result

E = concentration exceeds the calibration range
U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
DNR = do not report

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 9U4-26
Seattle WA 98124-2207

Report Date: May 18, 2020 10:24

Project: Boeing of Portland/025116.120.412

Account #: 13419
Group Number: 2098561
PO Number: 025116.120.412
State of Sample Origin: OR

Electronic Copy To	Landau	Attn: Chris Kimmel
Electronic Copy To	Landau Associates	Attn: Dani Jorgensen
Electronic Copy To	Landau	Attn: Erin Waibel
Electronic Copy To	Landau Associates	Attn: Laura Lafferty

Respectfully Submitted,

Kay Hower

(717) 556-7364

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
TowerInf-0520 Water	05/05/2020 10:30	1310056
TowerInf-0520 Total Metals Water	05/05/2020 10:30	1310057
TowerInf-0520 Dissolved Metals Water	05/05/2020 10:30	1310058
TowerInD-0520 Water	05/05/2020 10:35	1310059
TowerEff-0520 Water	05/05/2020 10:20	1310060
TowerEff-0520 Total Metals Water	05/05/2020 10:20	1310061
TowerEff-0520 Dissolved Metals Water	05/05/2020 10:20	1310062
TowerEfD-0520 Water	05/05/2020 10:25	1310063
Trip Blanks Water	05/05/2020	1310064

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Project Name: Boeing of Portland/025116.120.412
ELLE Group #: 2098561

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

EPA 300.0, Wet Chemistry

Sample #s: 1310060

The sample was reanalyzed at a 1X dilution on 5/13/20 with a result of 0.10 U mg/l.

Batch #: 20128720113A (Sample number(s): 1310060 UNSPK: 1310060 BKG: 1310060)

The recovery(ies) for the following analyte(s) in the MS exceeded the acceptance window indicating a positive bias: Nitrite Nitrogen

The recovery(ies) for the following analyte(s) in the MS were below the acceptance window: Sulfate

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Sulfate

Sample Description: **TowerInf-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 10:30

The Boeing Company
ELLE Sample #: WW 1310056
ELLE Group #: 2098561
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**1.7**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.9**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**0.3**		0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**9.3**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**8.9**		5.0	5
	SM 5310 C-2011		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**1.7**		1.0	1
	EPA 376.1		**mg/l**		**mg/l**	
01333	Sulfide	18496-25-8	2.0	U	2.0	1

Sample Description: **TowerInf-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 10:30

The Boeing Company
ELLE Sample #: WW 1310056
ELLE Group #: 2098561
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I201291AA	05/08/2020 12:03	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I201291AA	05/08/2020 12:02	Jennifer K Howe	1
00228	Sulfate	EPA 300.0	1	20130135109B	05/09/2020 14:42	Kevin Litwa	5
00273	Total Organic Carbon	SM 5310 C-2011	1	20136667602A	05/16/2020 14:58	Drew M Gerhart	1
01333	Sulfide	EPA 376.1	1	20129133302A	05/08/2020 08:33	Nicole Munsell	1

Sample Description: **TowerInf-0520 Total Metals Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 10:30

The Boeing Company
ELLE Sample #: WW 1310057
ELLE Group #: 2098561
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**0.668**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201281404401	05/13/2020 13:08	Lisa J Cooke	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	201281404401	05/13/2020 03:12	James L Mertz	1

Sample Description: **TowerInf-0520 Dissolved Metals Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 10:30

The Boeing Company
ELLE Sample #: WW 1310058
ELLE Group #: 2098561
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**0.558**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201281486601	05/07/2020 14:32	Cindy M Gehman	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	201281486601	05/07/2020 07:30	Annamaria Kuhns	1

Sample Description: **TowerInD-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 10:35

The Boeing Company
ELLE Sample #: WW 1310059
ELLE Group #: 2098561
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**2.0**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**2.0**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**0.3**		0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**9.3**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I201291AA	05/08/2020 12:24	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I201291AA	05/08/2020 12:23	Jennifer K Howe	1

Sample Description: **TowerEff-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 10:20

The Boeing Company
ELLE Sample #: WW 1310060
ELLE Group #: 2098561
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Acetone	67-64-1	5.0 U	5.0	1
11996	Benzene	71-43-2	0.2 U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5 U	0.5	1
11996	Bromoform	75-25-2	0.5 U	0.5	1
11996	Bromomethane	74-83-9	0.5 U	0.5	1
11996	2-Butanone	78-93-3	5.0 U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5 U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2 U	0.2	1
11996	Chlorobenzene	108-90-7	0.5 U	0.5	1
11996	Chloroethane	75-00-3	0.5 U	0.5	1
11996	Chloroform	67-66-3	0.2 U	0.2	1
11996	Chloromethane	74-87-3	0.5 U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5 U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5 U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2 U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2 U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2 U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2 U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5 U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2 U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2 U	0.2	1
11996	Ethylbenzene	100-41-4	0.5 U	0.5	1
11996	2-Hexanone	591-78-6	5.0 U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0 U	5.0	1
11996	Methylene Chloride	75-09-2	0.5 U	0.5	1
11996	Styrene	100-42-5	0.5 U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2 U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2 U	0.2	1
11996	Toluene	108-88-3	0.2 U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5 U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5 U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2 U	0.2	1
11996	Trichloroethene	79-01-6	0.2 U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5 U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5 U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2 U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5 U	0.5	1
11996	o-Xylene	95-47-6	0.5 U	0.5	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**1.6**	0.50	5
01506	Nitrite Nitrogen	14797-65-0	0.50 U	0.50	5
	The sample was reanalyzed at a 1X dilution on 5/13/20 with a result of 0.10 U mg/l.				
01506	Nitrite Nitrogen	14797-65-0	0.10 U	0.10	1
	The sample was reanalyzed at a 1X dilution on 5/13/20 with a result of 0.10 U mg/l.				
00228	**Sulfate**	14808-79-8	**12.5**	5.0	5

Sample Description: **TowerEff-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 10:20

The Boeing Company
ELLE Sample #: WW 1310060
ELLE Group #: 2098561
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 5310 C-2011**		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**1.2**	1.0	1
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1
	SM 4500-NH3 D-2011		**mg/l**	**mg/l**	
12677	Ammonia-Nitrogen	7664-41-7	0.24 U	0.24	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I201291AA	05/08/2020 12:45	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I201291AA	05/08/2020 12:44	Jennifer K Howe	1
00368	Nitrate Nitrogen	EPA 300.0	2	20128720113A	05/07/2020 09:15	Samantha Faverio	5
01506	Nitrite Nitrogen	EPA 300.0	1	20128720113A	05/07/2020 09:15	Samantha Faverio	5
01506	Nitrite Nitrogen	EPA 300.0	2	20128720113A	05/13/2020 01:41	Samantha Faverio	1
00228	Sulfate	EPA 300.0	1	20128720113A	05/09/2020 03:39	Samantha Faverio	5
00273	Total Organic Carbon	SM 5310 C-2011	1	20136667603A	05/15/2020 23:22	Drew M Gerhart	1
01333	Sulfide	EPA 376.1	1	20129133302A	05/08/2020 08:33	Nicole Munsell	1
12677	Ammonia-Nitrogen	SM 4500-NH3 D-2011	1	20128007201A	05/07/2020 21:17	Michelle L Lalli	1

Sample Description: **TowerEff-0520 Total Metals Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 10:20

The Boeing Company
ELLE Sample #: WW 1310061
ELLE Group #: 2098561
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**0.745**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201281404401	05/13/2020 13:59	Lisa J Cooke	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	201281404401	05/13/2020 03:12	James L Mertz	1

Sample Description: **TowerEff-0520 Dissolved Metals Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 10:20

The Boeing Company
ELLE Sample #: WW 1310062
ELLE Group #: 2098561
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**0.451**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201281486601	05/07/2020 15:07	Cindy M Gehman	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	201281486601	05/07/2020 07:30	Annamaria Kuhns	1

Sample Description: **TowerEfD-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 10:25

The Boeing Company
ELLE Sample #: WW 1310063
ELLE Group #: 2098561
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I201291AA	05/08/2020 13:06	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I201291AA	05/08/2020 13:05	Jennifer K Howe	1

Sample Description: **Trip Blanks Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020

The Boeing Company
ELLE Sample #: WW 1310064
ELLE Group #: 2098561
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I201291AA	05/08/2020 10:59	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I201291AA	05/08/2020 10:58	Jennifer K Howe	1

Quality Control Summary

Client Name: The Boeing Company Group Number: 2098561
Reported: 05/18/2020 10:24

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 was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: I201291AA	Sample number(s): 1310056,1310059-1310060,1310063-1310064		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/18/2020 10:24

Group Number: 2098561

Method Blank (continued)

Analysis Name	Result	LOQ
	mg/l	mg/l
Batch number: 201281404401	Sample number(s): 1310057,1310061	
Iron	0.200 U	0.200
Batch number: 201281486601	Sample number(s): 1310058,1310062	
Iron	0.206 U	0.206
Batch number: 20128720113A	Sample number(s): 1310060	
Nitrate Nitrogen	0.10 U	0.10
Nitrite Nitrogen	0.10 U	0.10
Sulfate	1.0 U	1.0
Batch number: 20130135109B	Sample number(s): 1310056	
Sulfate	1.0 U	1.0
Batch number: 20136667602A	Sample number(s): 1310056	
Total Organic Carbon	1.0 U	1.0
Batch number: 20136667603A	Sample number(s): 1310060	
Total Organic Carbon	1.0 U	1.0
Batch number: 20128007201A	Sample number(s): 1310060	
Ammonia-Nitrogen	0.24 U	0.24
Batch number: 20129133302A	Sample number(s): 1310056,1310060	
Sulfide	2.0 U	2.0

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: I201291AA	Sample number(s): 1310056,1310059-1310060,1310063-1310064								
Acetone	37.5	31.2	37.5	29.81	83	79	60-146	5	30
Benzene	5.00	5.20	5.00	5.08	104	102	80-120	2	30
Bromodichloromethane	5.00	5.12	5.00	5.01	102	100	73-124	2	30
Bromoform	5.00	5.00	5.00	4.84	100	97	49-144	3	30
Bromomethane	5.00	5.17	5.00	5.02	103	100	60-136	3	30
2-Butanone	37.5	34.03	37.5	33.04	91	88	59-141	3	30
Carbon Disulfide	5.00	4.64	5.00	4.57	93	91	67-130	2	30
Carbon Tetrachloride	5.00	5.28	5.00	5.10	106	102	64-141	3	30
Chlorobenzene	5.00	5.20	5.00	5.15	104	103	80-120	1	30
Chloroethane	5.00	5.04	5.00	5.02	101	100	63-120	0	30
Chloroform	5.00	5.22	5.00	5.14	104	103	80-120	2	30
Chloromethane	5.00	4.69	5.00	4.78	94	96	56-124	2	30
Dibromochloromethane	5.00	5.10	5.00	5.03	102	101	64-138	1	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/18/2020 10:24

Group Number: 2098561

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1-Dichloroethane	5.00	4.99	5.00	4.96	100	99	74-120	0	30
1,2-Dichloroethane	5.00	5.03	5.00	4.95	101	99	69-122	2	30
1,1-Dichloroethene	5.00	4.84	5.00	4.86	97	97	80-131	0	30
cis-1,2-Dichloroethene	5.00	5.51	5.00	5.44	110	109	80-122	1	30
trans-1,2-Dichloroethene	5.00	5.03	5.00	4.97	101	99	80-122	1	30
1,2-Dichloropropane	5.00	5.32	5.00	5.23	106	105	80-120	2	30
cis-1,3-Dichloropropene	5.00	5.06	5.00	5.00	101	100	67-121	1	30
trans-1,3-Dichloropropene	5.00	4.66	5.00	4.63	93	93	61-129	1	30
Ethylbenzene	5.00	5.08	5.00	5.07	102	101	80-120	0	30
2-Hexanone	25	23.62	25	22.55	94	90	52-140	5	30
4-Methyl-2-pentanone	25	23.81	25	22.39	95	90	55-140	6	30
Methylene Chloride	5.00	5.18	5.00	5.09	104	102	80-120	2	30
Styrene	5.00	5.27	5.00	5.19	105	104	80-120	1	30
1,1,2,2-Tetrachloroethane	5.00	5.07	5.00	5.09	101	102	75-123	1	30
Tetrachloroethene	5.00	5.26	5.00	5.28	105	106	80-120	0	30
Toluene	5.00	5.14	5.00	5.13	103	103	80-120	0	30
112Trichloro122Trifluoroethane	5.00	4.73	5.00	4.70	95	94	75-133	1	30
1,1,1-Trichloroethane	5.00	5.03	5.00	4.97	101	99	78-126	1	30
1,1,2-Trichloroethane	5.00	5.33	5.00	5.17	107	103	80-120	3	30
Trichloroethene	5.00	5.27	5.00	5.16	105	103	80-120	2	30
Trichlorofluoromethane	5.00	5.53	5.00	5.44	111	109	62-136	2	30
Vinyl Acetate	12.5	10.42	12.5	10.46	83	84	38-145	0	30
Vinyl Chloride	5.00	5.01	5.00	4.91	100	98	60-125	2	30
m+p-Xylene	10	10.45	10	10.37	104	104	80-120	1	30
o-Xylene	5.00	5.10	5.00	5.05	102	101	80-120	1	30
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 201281404401	Sample number(s): 1310057,1310061								
Iron	0.400	0.419			105		80-120		
Batch number: 201281486601	Sample number(s): 1310058,1310062								
Iron	0.400	0.410			103		80-120		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20128720113A	Sample number(s): 1310060								
Nitrate Nitrogen	0.750	0.770			103		90-110		
Nitrite Nitrogen	0.750	0.765			102		90-110		
Sulfate	7.50	7.49			100		90-110		
Batch number: 20130135109B	Sample number(s): 1310056								
Sulfate	7.50	7.67			102		90-110		
Batch number: 20136667602A	Sample number(s): 1310056								
Total Organic Carbon	25	23.95			96		91-113		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/18/2020 10:24

Group Number: 2098561

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/l	LCS Conc mg/l	LCSD Spike Added mg/l	LCSD Conc mg/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 20136667603A	Sample number(s): 1310060								
Total Organic Carbon	25	24.07			96		91-113		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20128007201A	Sample number(s): 1310060								
Ammonia-Nitrogen	5.00	5.19			104		82-124		
Batch number: 20129133302A	Sample number(s): 1310056,1310060								
Sulfide	20	19.32			97		80-120		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 201281404401	Sample number(s): 1310057,1310061 UNSPK: 1310057									
Iron	0.668	0.400	1.09	0.400	1.05	105	95	75-125	4	20
Batch number: 201281486601	Sample number(s): 1310058,1310062 UNSPK: 1310058									
Iron	0.558	0.418	0.906	0.418	0.943	83	92	75-125	4	20
	mg/l	**mg/l**	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20128720113A	Sample number(s): 1310060 UNSPK: 1310060									
Nitrate Nitrogen	1.56	2.50	3.84			92		90-110		
Nitrite Nitrogen	0.50 U	2.50	2.77			111*		90-110		
Sulfate	12.55	25	33.62			84*		90-110		
Batch number: 20130135109B	Sample number(s): 1310056 UNSPK: 1310056									
Sulfate	8.92	25	36.18			109		90-110		
	mg/l	**mg/l**	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20128007201A	Sample number(s): 1310060 UNSPK: 1310060									
Ammonia-Nitrogen	0.24 U	5.00	4.38	5.00	4.90	88	98	82-124	11	15

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/18/2020 10:24

Group Number: 2098561

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	mg/l	mg/l		
Batch number: 201281404401	Sample number(s): 1310057,1310061 BKG: 1310057			
Iron	0.668	0.679	2 (1)	20
Batch number: 201281486601	Sample number(s): 1310058,1310062 BKG: 1310058			
Iron	0.558	0.533	5 (1)	20
	mg/l	mg/l		
Batch number: 20128720113A	Sample number(s): 1310060 BKG: 1310060			
Nitrate Nitrogen	1.56	1.54	1 (1)	15
Nitrite Nitrogen	0.50 U	0.50 U	0 (1)	15
Sulfate	12.55	9.10	32* (1)	15
Batch number: 20130135109B	Sample number(s): 1310056 BKG: 1310056			
Sulfate	8.92	8.63	3 (1)	15
	mg/l	mg/l		
Batch number: 20128007201A	Sample number(s): 1310060 BKG: 1310060			
Ammonia-Nitrogen	0.24 U	0.24 U	0 (1)	11

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: I201291AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1310056	100	106	96	93
1310059	101	104	98	96
1310060	102	108	97	95
1310063	100	106	97	95
1310064	102	106	97	94
Blank	101	112	97	95
LCS	100	101	98	97
LCSD	100	101	98	97
Limits:	80-120	80-120	80-120	80-120

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 13419 For Eurofins Lancaster Laboratories Environmental use only Group # 209852 Sample # 131005L-64

Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Gresham Oregon
Site Project: Boeing of Portland
Site Program/#: 025116.120.412
Boeing PM: Debbie Talge; John Ruseff
Consultant Contact: Chris Kimmel
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify):
Sampler: WHL # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	VOC (3 vials)	TOC	Sulfate	Sulfide	Nitrate	Nitrite	Total Iron	Dissolved Iron	Ammonia				(4) Analyses Requested / (5) Remarks/Comments
Tower Inf-0520	5/5/20	10:30	H_2O	12	X	X	X	X			X	X					Metals QC
Tower InD-0520	↓	10:35	↓	3	X												
Tower Eff-0520	↓	10:20	↓	12	X	X	X	X	X	X	X	X	X				
Tower Eff D-0520	↓	10:25	↓	#3	X												
Trip Blanks	—	—	↓	2	X												

Page 30 of 32

(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 (7)
W. Fanning Lopez	5/5/20 16:45		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
			5/6/20 1302

Relinquished by commercial carrier (circle): UPS FedEx Other: _____
Temperature upon Receipt: _____ °C
Custody Seals Intact?: Yes No

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. NR

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 283658

Group Number(s): 2098561

Client: BOEING

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Date:	05/06/2020
Number of Packages:	1	Number of Projects:	3

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	No	Sample Date/Times match COC:	Yes
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	HCl
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Julissa Rivera-Santa

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	46730060WS	0.2	IR	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

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

Tests 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.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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. 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. 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.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is less than the LOQ
K2	Continuing Calibration Blank is above the QC limit and the sample result is less than the LOQ
K3	Initial Calibration Verification is above the QC limit and the sample result is less than the LOQ
K4	Continuing Calibration Verification is above the QC limit and the sample result is less than the LOQ
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 9U4-26
Seattle WA 98124-2207

Report Date: May 19, 2020 06:20

Project: Boeing of Portland/025116.120.412

Account #: 13419
Group Number: 2098562
PO Number: 025116.120.412
State of Sample Origin: OR

Electronic Copy To	Landau	Attn: Chris Kimmel
Electronic Copy To	Landau Associates	Attn: Dani Jorgensen
Electronic Copy To	Landau	Attn: Erin Waibel
Electronic Copy To	Landau Associates	Attn: Laura Lafferty

Respectfully Submitted,

Kay Hower

(717) 556-7364

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
E-4-0520 Water	05/05/2020 14:15	1310065
E-4-0520 Total Metals Water	05/05/2020 14:15	1310066
E-4-0520 Dissolved Metals Water	05/05/2020 14:15	1310067
E-12-0520 Water	05/05/2020 13:15	1310068
E-13-0520 Water	05/05/2020 13:42	1310069
E-15-0520 Water	05/05/2020 15:20	1310070
E-16-0520 Water	05/05/2020 14:55	1310071
DP1-0520 Water	05/05/2020 12:15	1310072
BOP-W-0520 Water	05/05/2020 14:00	1310073
Trip Blanks Water	05/05/2020	1310074

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Project Name: Boeing of Portland/025116.120.412
ELLE Group #: 2098562

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

SW-846 8260C 25mL purge, GC/MS Volatiles

Sample #s: 1310073

The GC/MS volatile internal standard peak areas listed below are outside the acceptance criteria of -50% to +100%. Sufficient sample was not available to repeat the analysis.

Internal Standard - Initial Analysis	% Recovery
tert-Butyl Alcohol-d10	-59

RSKSOP-175 modified, GC Miscellaneous

Sample #s: 1310070, 1310071, 1310072

The response for Acetylene in the continuing calibration verification standard is outside the QC acceptance limits in trial 2. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported.

EPA 300.0, Wet Chemistry

Sample #s: 1310070, 1310071

The sample was reanalyzed at a 1X dilution on 5/13/20 with a result of 0.10 U mg/l.

Sample Description: **E-4-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 14:15

The Boeing Company
ELLE Sample #: WW 1310065
ELLE Group #: 2098562
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**3.4**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**2.0**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**0.8**		0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	**112Trichloro122Trifluoroethane**	76-13-1	**0.6**		0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**21**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	Ethane	74-84-0	5.0	U	5.0	1
07105	Ethene	74-85-1	5.0	U	5.0	1
07105	**Methane**	74-82-8	**210**		5.0	1
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**0.78**		0.50	5

Sample Description: **E-4-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 14:15

The Boeing Company
ELLE Sample #: WW 1310065
ELLE Group #: 2098562
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00228	**Sulfate**	14808-79-8	**8.7**	5.0	5
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	Total Organic Carbon	n.a.	1.0 U	1.0	1
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I201291AA	05/08/2020 13:27	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I201291AA	05/08/2020 13:26	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	201280003A	05/07/2020 11:48	Johanna C Kennedy	1
00368	Nitrate Nitrogen	EPA 300.0	2	20128720113A	05/07/2020 10:06	Samantha Faverio	5
00228	Sulfate	EPA 300.0	1	20128720113A	05/09/2020 05:04	Samantha Faverio	5
00273	Total Organic Carbon	SM 5310 C-2011	1	20136667603A	05/15/2020 23:35	Drew M Gerhart	1
01333	Sulfide	EPA 376.1	1	20129133302A	05/08/2020 08:33	Nicole Munsell	1

Sample Description: **E-4-0520 Total Metals Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 14:15

The Boeing Company
ELLE Sample #: WW 1310066
ELLE Group #: 2098562
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**0.542**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201281404401	05/13/2020 14:02	Lisa J Cooke	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	201281404401	05/13/2020 03:12	James L Mertz	1

Sample Description: **E-4-0520 Dissolved Metals Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 14:15

The Boeing Company
ELLE Sample #: WW 1310067
ELLE Group #: 2098562
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**0.522**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201281486601	05/07/2020 15:04	Cindy M Gehman	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	201281486601	05/07/2020 07:30	Annamaria Kuhns	1

Sample Description: **E-12-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 13:15

The Boeing Company
ELLE Sample #: WW 1310068
ELLE Group #: 2098562
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**1.6**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**3.4**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**0.3**		0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**14**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.5**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I201291AA	05/08/2020 13:49	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I201291AA	05/08/2020 13:48	Jennifer K Howe	1

Sample Description: **E-13-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 13:42

The Boeing Company
ELLE Sample #: WW 1310069
ELLE Group #: 2098562
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**2.0**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.9**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**0.3**		0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**9.0**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.3**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I201291AA	05/08/2020 14:10	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I201291AA	05/08/2020 14:09	Jennifer K Howe	1

Sample Description: **E-15-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 15:20

The Boeing Company
ELLE Sample #: WW 1310070
ELLE Group #: 2098562
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**0.9**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**5.1**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.7**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**3.1**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	Ethane	74-84-0	5.0	U	5.0	1
07105	Ethene	74-85-1	5.0	U	5.0	1
07105	**Methane**	74-82-8	**7,800**	**E**	5.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	250	U	250	50
07105	Ethane	74-84-0	250	U	250	50

Sample Description: **E-15-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 15:20

The Boeing Company
ELLE Sample #: WW 1310070
ELLE Group #: 2098562
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Ethene	74-85-1	250 U	250	50
07105	**Methane**	74-82-8	**11,000**	250	50
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.50 U	0.50	5
	The sample was reanalyzed at a 1X dilution on 5/13/20 with a result of 0.10 U mg/l.				
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
	The sample was reanalyzed at a 1X dilution on 5/13/20 with a result of 0.10 U mg/l.				
00228	**Sulfate**	14808-79-8	**2.4**	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**1.7**	1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I201291AA	05/08/2020 14:31	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I201291AA	05/08/2020 14:30	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	201280003A	05/07/2020 12:06	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	201280003A	05/08/2020 12:29	Johanna C Kennedy	50
00368	Nitrate Nitrogen	EPA 300.0	2	20128720113A	05/07/2020 10:40	Samantha Faverio	5
00368	Nitrate Nitrogen	EPA 300.0	3	20128720113A	05/13/2020 03:06	Niyati Desai	1
00228	Sulfate	EPA 300.0	3	20128720113A	05/13/2020 03:06	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20136667603A	05/16/2020 00:15	Drew M Gerhart	1

Sample Description: **E-16-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 14:55

The Boeing Company
ELLE Sample #: WW 1310071
ELLE Group #: 2098562
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Acetone	67-64-1	5.0 U	5.0	1
11996	Benzene	71-43-2	0.2 U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5 U	0.5	1
11996	Bromoform	75-25-2	0.5 U	0.5	1
11996	Bromomethane	74-83-9	0.5 U	0.5	1
11996	2-Butanone	78-93-3	5.0 U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5 U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2 U	0.2	1
11996	Chlorobenzene	108-90-7	0.5 U	0.5	1
11996	Chloroethane	75-00-3	0.5 U	0.5	1
11996	Chloroform	67-66-3	0.2 U	0.2	1
11996	Chloromethane	74-87-3	0.5 U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5 U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5 U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2 U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**0.7**	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.4**	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2 U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5 U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2 U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2 U	0.2	1
11996	Ethylbenzene	100-41-4	0.5 U	0.5	1
11996	2-Hexanone	591-78-6	5.0 U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0 U	5.0	1
11996	Methylene Chloride	75-09-2	0.5 U	0.5	1
11996	Styrene	100-42-5	0.5 U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2 U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2 U	0.2	1
11996	Toluene	108-88-3	0.2 U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5 U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5 U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2 U	0.2	1
11996	**Trichloroethene**	79-01-6	**1.5**	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5 U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5 U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**1.5**	0.2	1
11996	m+p-Xylene	179601-23-1	0.5 U	0.5	1
11996	o-Xylene	95-47-6	0.5 U	0.5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**6,400 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	250 U	250	50
07105	Ethane	74-84-0	250 U	250	50

Sample Description: **E-16-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 14:55

The Boeing Company
ELLE Sample #: WW 1310071
ELLE Group #: 2098562
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Ethene	74-85-1	250 U	250	50
07105	**Methane**	74-82-8	**9,000**	250	50
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.50 U	0.50	5
	The sample was reanalyzed at a 1X dilution on 5/13/20 with a result of 0.10 U mg/l.				
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
	The sample was reanalyzed at a 1X dilution on 5/13/20 with a result of 0.10 U mg/l.				
00228	**Sulfate**	14808-79-8	**2.4**	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**5.0**	1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I201291AA	05/08/2020 16:17	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I201291AA	05/08/2020 16:16	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	201280003A	05/07/2020 12:24	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	201280003A	05/08/2020 12:46	Johanna C Kennedy	50
00368	Nitrate Nitrogen	EPA 300.0	2	20128720113A	05/07/2020 10:23	Samantha Faverio	5
00368	Nitrate Nitrogen	EPA 300.0	3	20128720113A	05/13/2020 02:49	Niyati Desai	1
00228	Sulfate	EPA 300.0	3	20128720113A	05/13/2020 02:49	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20136667603A	05/16/2020 00:29	Drew M Gerhart	1

Sample Description: **DP1-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 12:15

The Boeing Company
ELLE Sample #: WW 1310072
ELLE Group #: 2098562
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**43**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**5.4**		5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	Ethane	74-84-0	5.0	U	5.0	1
07105	Ethene	74-85-1	5.0	U	5.0	1
07105	**Methane**	74-82-8	**18,000**	**E**	5.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	500	U	500	100
07105	Ethane	74-84-0	500	U	500	100
07105	Ethene	74-85-1	500	U	500	100

Sample Description: **DP1-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 12:15

The Boeing Company
ELLE Sample #: WW 1310072
ELLE Group #: 2098562
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	**Methane**	74-82-8	**24,000**	500	100
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00228	Sulfate	14808-79-8	5.0 U	5.0	5
00228	Sulfate	14808-79-8	1.0 U	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**49.5**	10.0	10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I201291AA	05/08/2020 17:00	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I201291AA	05/08/2020 16:59	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	201280003A	05/07/2020 12:43	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	201280003A	05/08/2020 13:09	Johanna C Kennedy	100
00228	Sulfate	EPA 300.0	1	20130135109B	05/09/2020 16:15	Kevin Litwa	5
00228	Sulfate	EPA 300.0	2	20130135109B	05/14/2020 00:09	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20136667603A	05/16/2020 00:42	Drew M Gerhart	10

Sample Description: **BOP-W-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 14:00

The Boeing Company
ELLE Sample #: WW 1310073
ELLE Group #: 2098562
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**3.3**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**2.0**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**0.7**		0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	**112Trichloro122Trifluoroethane**	76-13-1	**0.5**		0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**20**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

The GC/MS volatile internal standard peak areas listed below are outside the acceptance criteria of -50% to +100%. Sufficient sample was not available to repeat the analysis.

Internal Standard - Initial Analysis	% Recovery
tert-Butyl Alcohol-d10	-59

Sample Description: **BOP-W-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020 14:00

The Boeing Company
ELLE Sample #: WW 1310073
ELLE Group #: 2098562
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I201291AA	05/08/2020 17:42	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I201291AA	05/08/2020 17:41	Jennifer K Howe	1

Sample Description: **Trip Blanks Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/06/2020 13:02
Collection Date/Time: 05/05/2020

The Boeing Company
ELLE Sample #: WW 1310074
ELLE Group #: 2098562
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	I201291AA	05/08/2020 11:20	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	I201291AA	05/08/2020 11:19	Jennifer K Howe	1

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/19/2020 06:20

Group Number: 2098562

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 was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: I201291AA	Sample number(s): 1310065,1310068-1310074		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/19/2020 06:20

Group Number: 2098562

Method Blank (continued)

Analysis Name	Result	LOQ
	ug/l	ug/l
Batch number: 201280003A	Sample number(s): 1310065,1310070-1310072	
Acetylene	5.0 U	5.0
Ethane	5.0 U	5.0
Ethene	5.0 U	5.0
Methane	5.0 U	5.0
	mg/l	mg/l
Batch number: 201281404401	Sample number(s): 1310066	
Iron	0.200 U	0.200
Batch number: 201281486601	Sample number(s): 1310067	
Iron	0.206 U	0.206
Batch number: 20128720113A	Sample number(s): 1310065,1310070-1310071	
Nitrate Nitrogen	0.10 U	0.10
Sulfate	1.0 U	1.0
Batch number: 20130135109B	Sample number(s): 1310072	
Sulfate	1.0 U	1.0
Batch number: 20136667603A	Sample number(s): 1310065,1310070-1310072	
Total Organic Carbon	1.0 U	1.0
Batch number: 20129133302A	Sample number(s): 1310065	
Sulfide	2.0 U	2.0

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: I201291AA	Sample number(s): 1310065,1310068-1310074								
Acetone	37.5	31.2	37.5	29.81	83	79	60-146	5	30
Benzene	5.00	5.20	5.00	5.08	104	102	80-120	2	30
Bromodichloromethane	5.00	5.12	5.00	5.01	102	100	73-124	2	30
Bromoform	5.00	5.00	5.00	4.84	100	97	49-144	3	30
Bromomethane	5.00	5.17	5.00	5.02	103	100	60-136	3	30
2-Butanone	37.5	34.03	37.5	33.04	91	88	59-141	3	30
Carbon Disulfide	5.00	4.64	5.00	4.57	93	91	67-130	2	30
Carbon Tetrachloride	5.00	5.28	5.00	5.10	106	102	64-141	3	30
Chlorobenzene	5.00	5.20	5.00	5.15	104	103	80-120	1	30
Chloroethane	5.00	5.04	5.00	5.02	101	100	63-120	0	30
Chloroform	5.00	5.22	5.00	5.14	104	103	80-120	2	30
Chloromethane	5.00	4.69	5.00	4.78	94	96	56-124	2	30
Dibromochloromethane	5.00	5.10	5.00	5.03	102	101	64-138	1	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/19/2020 06:20

Group Number: 2098562

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1-Dichloroethane	5.00	4.99	5.00	4.96	100	99	74-120	0	30
1,2-Dichloroethane	5.00	5.03	5.00	4.95	101	99	69-122	2	30
1,1-Dichloroethene	5.00	4.84	5.00	4.86	97	97	80-131	0	30
cis-1,2-Dichloroethene	5.00	5.51	5.00	5.44	110	109	80-122	1	30
trans-1,2-Dichloroethene	5.00	5.03	5.00	4.97	101	99	80-122	1	30
1,2-Dichloropropane	5.00	5.32	5.00	5.23	106	105	80-120	2	30
cis-1,3-Dichloropropene	5.00	5.06	5.00	5.00	101	100	67-121	1	30
trans-1,3-Dichloropropene	5.00	4.66	5.00	4.63	93	93	61-129	1	30
Ethylbenzene	5.00	5.08	5.00	5.07	102	101	80-120	0	30
2-Hexanone	25	23.62	25	22.55	94	90	52-140	5	30
4-Methyl-2-pentanone	25	23.81	25	22.39	95	90	55-140	6	30
Methylene Chloride	5.00	5.18	5.00	5.09	104	102	80-120	2	30
Styrene	5.00	5.27	5.00	5.19	105	104	80-120	1	30
1,1,2,2-Tetrachloroethane	5.00	5.07	5.00	5.09	101	102	75-123	1	30
Tetrachloroethene	5.00	5.26	5.00	5.28	105	106	80-120	0	30
Toluene	5.00	5.14	5.00	5.13	103	103	80-120	0	30
112Trichloro122Trifluoroethane	5.00	4.73	5.00	4.70	95	94	75-133	1	30
1,1,1-Trichloroethane	5.00	5.03	5.00	4.97	101	99	78-126	1	30
1,1,2-Trichloroethane	5.00	5.33	5.00	5.17	107	103	80-120	3	30
Trichloroethene	5.00	5.27	5.00	5.16	105	103	80-120	2	30
Trichlorofluoromethane	5.00	5.53	5.00	5.44	111	109	62-136	2	30
Vinyl Acetate	12.5	10.42	12.5	10.46	83	84	38-145	0	30
Vinyl Chloride	5.00	5.01	5.00	4.91	100	98	60-125	2	30
m+p-Xylene	10	10.45	10	10.37	104	104	80-120	1	30
o-Xylene	5.00	5.10	5.00	5.05	102	101	80-120	1	30
	ug/l	**ug/l**	**ug/l**	**ug/l**					
Batch number: 201280003A	Sample number(s): 1310065,1310070-1310072								
Acetylene	51.25	53.16	51.25	50.76	104	99	57-146	5	20
Ethane	59.39	59.28	59.39	58.9	100	99	85-115	1	20
Ethene	60.4	60.49	60.4	59.94	100	99	83-115	1	20
Methane	59.42	63.16	59.42	62.87	106	106	85-115	0	20
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 201281404401	Sample number(s): 1310066								
Iron	0.400	0.419			105		80-120		
Batch number: 201281486601	Sample number(s): 1310067								
Iron	0.400	0.410			103		80-120		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20128720113A	Sample number(s): 1310065,1310070-1310071								
Nitrate Nitrogen	0.750	0.770			103		90-110		
Sulfate	7.50	7.49			100		90-110		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/19/2020 06:20

Group Number: 2098562

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/l	LCS Conc mg/l	LCSD Spike Added mg/l	LCSD Conc mg/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 20130135109B	Sample number(s): 1310072								
Sulfate	7.50	7.67			102		90-110		
Batch number: 20136667603A	Sample number(s): 1310065,1310070-1310072								
Total Organic Carbon	25	24.07			96		91-113		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 20129133302A	Sample number(s): 1310065								
Sulfide	20	19.32			97		80-120		

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: I201291AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1310065	103	105	98	96
1310068	101	103	98	93
1310069	103	105	98	95
1310070	101	103	96	95
1310071	103	104	97	95
1310072	100	101	97	88
1310073	101	103	97	96
1310074	101	102	97	94
Blank	101	112	97	95
LCS	100	101	98	97
LCSD	100	101	98	97
Limits:	80-120	80-120	80-120	80-120

Analysis Name: AMEE by RSK-175
Batch number: 201280003A

	Propene
1310065	68
1310070	62
1310070DL	94
1310071	61
1310071DL	91
1310072	68

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/19/2020 06:20

Group Number: 2098562

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: AMEE by RSK-175
Batch number: 201280003A

	Propene
1310072DL	92
Blank	103
LCS	103
LCSD	102
Limits:	28-140

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 13419 For Eurofins Lancaster Laboratories Environmental use only Group # 2098562 Sample # 131005 131005-74
Please print. Instructions on reverse side correspond.
GW 208 5/6/2020

1 Client Information

Site Location: Gresham Oregon
Site Project: Boeing of Portland
Site Program/#: 025116.120.412
Boeing PM: Debbie Tacoe
Consultant Contact: Chris Kimmel
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL # of Coolers: 1

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	VOC (38 list)	TOC	Sulfate	Sulfide	nitrate	AMEE	total Iron	Dissolved Iron					4 Analyses Requested	5 Remarks/Comments
E-4-0520	5/5/20	14:15	H_2O	12	X	X	X	X	X	X	X	X						
E-12-0520		13:15		3	X													
E-13-0520		13:42		3	X													
E-15-0520		15:20		9	X	X	X		X	X								
E-16-0520		14:55		9	X	X	X		X	X								
DP1-0520		12:15		9	X	X	X			X								
BOP-W-0520		14:00		2	X													
Trip Blanks	—	—		2	X													

Page 24 of 27

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. Virginia Lyon	5/5/20 16:45		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
			5/6/20 1302

Relinquished by commercial carrier (circle): UPS FedEx Other: _____
Temperature upon Receipt: _____ °C
Custody Seals Intact?: Yes No

7

Client: BOEING

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Date:	05/06/2020
Number of Packages:	1	Number of Projects:	3

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	No	Sample Date/Times match COC:	Yes
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	HCl
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Julissa Rivera-Santa

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	46730060WS	0.2	IR	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

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

Tests 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.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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. 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. 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.

eurofins | Lancaster Laboratories Environmental

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is less than the LOQ
K2	Continuing Calibration Blank is above the QC limit and the sample result is less than the LOQ
K3	Initial Calibration Verification is above the QC limit and the sample result is less than the LOQ
K4	Continuing Calibration Verification is above the QC limit and the sample result is less than the LOQ
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 9U4-26
Seattle WA 98124-2207

Report Date: May 29, 2020 09:20

Project: Boeing of Portland/025116.120.412

Account #: 13419
Group Number: 2099064
PO Number: 025116.120.412
State of Sample Origin: OR

Electronic Copy To	Landau	Attn: Chris Kimmel
Electronic Copy To	Landau Associates	Attn: Dani Jorgensen
Electronic Copy To	Landau	Attn: Erin Waibel
Electronic Copy To	Landau Associates	Attn: Laura Lafferty

Respectfully Submitted,

Kay Hower

(717) 556-7364

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
BOP-78i-0520 Water	05/07/2020 17:05	1312317
BOP-79i-0520 Water	05/07/2020 17:15	1312318
BOP-84i-0520 Water	05/07/2020 15:20	1312319
BOP-85i-0520 Water	05/07/2020 16:20	1312320
BOP-86i-0520 Water	05/07/2020 15:55	1312321
BOP-87i-0520 Water	05/07/2020 16:45	1312322
LAI-8-0520 Water	05/08/2020 12:00	1312323
BOP-10i-0520 Water	05/08/2020 16:39	1312324
E-6-0520 Water	05/08/2020 15:52	1312325
E-7-0520 Water	05/08/2020 14:00	1312326
Trip Blanks Water	05/07/2020	1312327

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Project Name: Boeing of Portland/025116.120.412
ELLE Group #: 2099064

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.
Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

SW-846 8260C 25mL purge, GC/MS Volatiles

Sample #s: 1312319, 1312320, 1312321, 1312322, 1312326

The value reported for acetone is an estimated maximum possible concentration due to interference from a non-target compound.

ECY 97-602 NWTPH-Dx modified, GC Petroleum Hydrocarbons w/Si

Sample #s: 1312323

The sample pattern does not match our reference standard for #2fuel/diesel.

The sample pattern is most similar to our reference standard for Motor oil composite.

Batch #: 201350018A (Sample number(s): 1312323)

The recovery(ies) for one or more surrogates exceeded the acceptance window indicating a positive bias for sample(s) 1312323

RSKSOP-175 modified, GC Miscellaneous

Sample #s: 1312326

Preservation requirements were not met.
A preserved vial was submitted for analysis. However, the pH at the time of analysis was 4.

A target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits for Trial 1. Since the result is high and the target analyte(s) is not detected in the sample, the data is reported.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
Acetylene	+17%

Batch #: 201320006A (Sample number(s): 1312326)

The recovery(ies) for one or more surrogates exceeded the acceptance window indicating a positive bias for sample(s) 1312326RE

Batch #: 201340003A (Sample number(s): 1312324-1312326)

The recovery(ies) for one or more surrogates exceeded the acceptance window indicating a positive bias for sample(s) 1312326

EPA 300.0, Wet Chemistry

Sample #s: 1312323

Sample was originally analyzed within the 48 hour holding time; however due to analyst error sample was analyzed at a dilution factor of five instead of client requested dilution of one. Sample was reanalyzed past hold at the correct DF1 on 05/27/2020 with a result of 0.10 U mg/l.

Sample Description: **BOP-78i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020 17:05

The Boeing Company
ELLE Sample #: WW 1312317
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	**Acetone**	67-64-1	**35**	5.0	1
11996	**Benzene**	71-43-2	**0.3**	0.2	1
11996	Bromodichloromethane	75-27-4	0.5 U	0.5	1
11996	Bromoform	75-25-2	0.5 U	0.5	1
11996	Bromomethane	74-83-9	0.5 U	0.5	1
11996	**2-Butanone**	78-93-3	**110**	5.0	1
11996	Carbon Disulfide	75-15-0	0.5 U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2 U	0.2	1
11996	Chlorobenzene	108-90-7	0.5 U	0.5	1
11996	Chloroethane	75-00-3	0.5 U	0.5	1
11996	**Chloroform**	67-66-3	**0.4**	0.2	1
11996	Chloromethane	74-87-3	0.5 U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5 U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5 U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2 U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2 U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**3.5**	0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**0.6**	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5 U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2 U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2 U	0.2	1
11996	Ethylbenzene	100-41-4	0.5 U	0.5	1
11996	2-Hexanone	591-78-6	5.0 U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0 U	5.0	1
11996	Methylene Chloride	75-09-2	0.5 U	0.5	1
11996	Styrene	100-42-5	0.5 U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2 U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2 U	0.2	1
11996	Toluene	108-88-3	0.2 U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5 U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5 U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2 U	0.2	1
11996	Trichloroethene	79-01-6	0.2 U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5 U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5 U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**12**	0.2	1
11996	m+p-Xylene	179601-23-1	0.5 U	0.5	1
11996	o-Xylene	95-47-6	0.5 U	0.5	1

Sample Description: **BOP-78i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020 17:05

The Boeing Company
ELLE Sample #: WW 1312317
ELLE Group #: 2099064
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201391AA	05/18/2020 12:21	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201391AA	05/18/2020 12:20	Jennifer K Howe	1

Sample Description: **BOP-79i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020 17:15

The Boeing Company
ELLE Sample #: WW 1312318
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	**Benzene**	71-43-2	**0.4**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.4**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**3.5**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.3**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Sample Description: **BOP-79i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020 17:15

The Boeing Company
ELLE Sample #: WW 1312318
ELLE Group #: 2099064
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201391AA	05/18/2020 12:42	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201391AA	05/18/2020 12:41	Jennifer K Howe	1

Sample Description: **BOP-84i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020 15:20

The Boeing Company
ELLE Sample #: WW 1312319
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**98**		5.0	1
11996	**Benzene**	71-43-2	**1.8**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**270**	**E**	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	**Chloroform**	67-66-3	**1.8**		0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.5**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	**4-Methyl-2-pentanone**	108-10-1	**14**		5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.6**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.7**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	Acetone	67-64-1	50	U	50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10

Sample Description: **BOP-84i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020 15:20

The Boeing Company
ELLE Sample #: WW 1312319
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**240**		50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

The value reported for acetone is an estimated maximum possible concentration due to interference from a non-target compound.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

Sample Description: **BOP-84i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020 15:20

The Boeing Company
ELLE Sample #: WW 1312319
ELLE Group #: 2099064
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201391AA	05/18/2020 13:04	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	H201401AA	05/19/2020 12:15	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201391AA	05/18/2020 13:03	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H201401AA	05/19/2020 12:14	Jennifer K Howe	10

Sample Description: **BOP-85i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020 16:20

The Boeing Company
ELLE Sample #: WW 1312320
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**190**		5.0	1
11996	**Benzene**	71-43-2	**2.1**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**940**	**E**	5.0	1
11996	**Carbon Disulfide**	75-15-0	**0.6**		0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	**Chloroform**	67-66-3	**3.7**		0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.9**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	**Methylene Chloride**	75-09-2	**0.9**		0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.5**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.3**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**1.1**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	**Acetone**	67-64-1	**200**		50	10
11996	**Benzene**	71-43-2	**4.2**		2.0	10

Sample Description: **BOP-85i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020 16:20

The Boeing Company
ELLE Sample #: WW 1312320
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**550**		50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

The value reported for acetone is an estimated maximum possible concentration due to interference from a non-target compound.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

Sample Description: **BOP-85i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020 16:20

The Boeing Company
ELLE Sample #: WW 1312320
ELLE Group #: 2099064
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201391AA	05/18/2020 14:30	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	H201391AA	05/18/2020 14:52	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201391AA	05/18/2020 14:29	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H201391AA	05/18/2020 14:51	Jennifer K Howe	10

Sample Description: **BOP-86i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020 15:55

The Boeing Company
ELLE Sample #: WW 1312321
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**230**		5.0	1
11996	**Benzene**	71-43-2	**4.7**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**610**	**E**	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	**Chloroform**	67-66-3	**1.5**		0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.4**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	**4-Methyl-2-pentanone**	108-10-1	**7.9**		5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.2**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.6**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.5**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	**Acetone**	67-64-1	**180**		50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10

Sample Description: **BOP-86i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020 15:55

The Boeing Company
ELLE Sample #: WW 1312321
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**760**		50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	**Chloroform**	67-66-3	**3.8**		2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

The value reported for acetone is an estimated maximum possible concentration due to interference from a non-target compound.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

Sample Description: **BOP-86i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020 15:55

The Boeing Company
ELLE Sample #: WW 1312321
ELLE Group #: 2099064
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201391AA	05/18/2020 15:14	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	H201391AA	05/18/2020 15:36	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201391AA	05/18/2020 15:13	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H201391AA	05/18/2020 15:35	Jennifer K Howe	10

Sample Description: **BOP-87i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020 16:45

The Boeing Company
ELLE Sample #: WW 1312322
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**110**		5.0	1
11996	**Benzene**	71-43-2	**1.7**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**300**	**E**	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	**Chloroethane**	75-00-3	**0.6**		0.5	1
11996	**Chloroform**	67-66-3	**1.4**		0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**0.3**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**5.3**		0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**0.3**		0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.3**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.5**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**95**	**E**	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	**Acetone**	67-64-1	**120**		50	10
11996	Benzene	71-43-2	2.0	U	2.0	10

Sample Description: **BOP-87i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020 16:45

The Boeing Company
ELLE Sample #: WW 1312322
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**290**		50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	**cis-1,2-Dichloroethene**	156-59-2	**4.6**		2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	**Vinyl Chloride**	75-01-4	**82**		2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10

The value reported for acetone is an estimated maximum possible concentration due to interference from a non-target compound.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

Sample Description: **BOP-87i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020 16:45

The Boeing Company
ELLE Sample #: WW 1312322
ELLE Group #: 2099064
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201391AA	05/18/2020 15:58	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	H201391AA	05/18/2020 16:19	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201391AA	05/18/2020 15:57	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H201391AA	05/18/2020 16:18	Jennifer K Howe	10

Sample Description: **LAI-8-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/08/2020 12:00

The Boeing Company
ELLE Sample #: WW 1312323
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**34**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**9.7**		5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**17**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	**4-Methyl-2-pentanone**	108-10-1	**5.1**		5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**0.2**		0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**2.0**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.6**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC Petroleum Hydrocarbons w/Si	**ECY 97-602 NWTPH-Dx modified**		**mg/l**		**mg/l**	
12094	**Diesel/#2 Fuel w/Si Gel**	68334-30-5	**310**		11	100

Sample Description: **LAI-8-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/08/2020 12:00

The Boeing Company
ELLE Sample #: WW 1312323
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Petroleum Hydrocarbons w/Si	**ECY 97-602 NWTPH-Dx modified**		**mg/l**	**mg/l**	
12094	**DRO C12-C24 w/Si Gel**	n.a.	**250**	11	100
12094	**Motor Oil w/Si Gel**	n.a.	**400**	28	100
	The sample pattern does not match our reference standard for #2fuel/diesel. The sample pattern is most similar to our reference standard for Motor oil composite.				
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.50 U	0.50	5
	Sample was originally analyzed within the 48 hour holding time; however due to analyst error sample was analyzed at a dilution factor of five instead of client requested dilution of one. Sample was reanalyzed past hold at the correct DF1 on 05/27/2020 with a result of 0.10 U mg/l.				
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
	Sample was originally analyzed within the 48 hour holding time; however due to analyst error sample was analyzed at a dilution factor of five instead of client requested dilution of one. Sample was reanalyzed past hold at the correct DF1 on 05/27/2020 with a result of 0.10 U mg/l.				
00228	Sulfate	14808-79-8	5.0 U	5.0	5
00228	Sulfate	14808-79-8	1.0 U	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**80.4**	5.0	5

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201391AA	05/18/2020 13:25	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201391AA	05/18/2020 13:24	Jennifer K Howe	1
12094	NWTPH-Dx Water w/ Silica Gel	ECY 97-602 NWTPH-Dx modified	1	201350018A	05/16/2020 02:30	Heather E Williams	100
12120	TPH-Dx w/Fuel Water Ext. (SG)	ECY 97-602 NWTPH-Dx 06/97	1	201350018A	05/14/2020 22:55	Bradley W VanLeuven	1
00368	Nitrate Nitrogen	EPA 300.0	1	20131135117A	05/10/2020 07:53	Kevin Litwa	5
00368	Nitrate Nitrogen	EPA 300.0	2	20131135117A	05/27/2020 20:43	Kevin Litwa	1
00228	Sulfate	EPA 300.0	1	20131135117A	05/10/2020 07:53	Kevin Litwa	5
00228	Sulfate	EPA 300.0	2	20131135117A	05/27/2020 20:43	Kevin Litwa	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20139667606A	05/19/2020 13:59	Drew M Gerhart	5

Sample Description: **BOP-10i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/08/2020 16:39

The Boeing Company
ELLE Sample #: WW 1312324
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**23**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**170**		5.0	1
11996	**Carbon Disulfide**	75-15-0	**0.6**		0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	**1,1-Dichloroethene**	75-35-4	**0.8**		0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**13**		0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**0.6**		0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**6.9**		0.2	1
11996	**Toluene**	108-88-3	**1.0**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**31**	**E**	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.7**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	Acetone	67-64-1	50	U	50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10

Sample Description: **BOP-10i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/08/2020 16:39

The Boeing Company
ELLE Sample #: WW 1312324
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**160**		50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	**cis-1,2-Dichloroethene**	156-59-2	**12**		2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	**Tetrachloroethene**	127-18-4	**5.6**		2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	**Trichloroethene**	79-01-6	**28**		2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	Ethane	74-84-0	5.0	U	5.0	1
07105	Ethene	74-85-1	5.0	U	5.0	1
07105	**Methane**	74-82-8	**7,900**	**E**	5.0	1

Trial ID: DL

Sample Description: **BOP-10i-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/08/2020 16:39

The Boeing Company
ELLE Sample #: WW 1312324
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	500 U	500	100
07105	Ethane	74-84-0	500 U	500	100
07105	Ethene	74-85-1	500 U	500	100
07105	**Methane**	74-82-8	**11,000**	500	100
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00228	Sulfate	14808-79-8	1.0 U	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**1,370**	250	250

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201391AA	05/18/2020 16:41	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	H201391AA	05/18/2020 17:02	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201391AA	05/18/2020 16:40	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H201391AA	05/18/2020 17:01	Jennifer K Howe	10
07105	AMEE by RSK-175	RSKSOP-175 modified	1	201340003A	05/13/2020 13:42	Esther Kathryn Lane	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	201340003A	05/13/2020 16:26	Esther Kathryn Lane	100
00228	Sulfate	EPA 300.0	1	20131135209B	05/19/2020 17:01	Samantha Faverio	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20139667606A	05/19/2020 14:12	Drew M Gerhart	250

Sample Description: **E-6-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/08/2020 15:52

The Boeing Company
ELLE Sample #: WW 1312325
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**11**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**10**		0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**2.4**		0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.2**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**120**	**E**	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	Acetone	67-64-1	50	U	50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10

Sample Description: **E-6-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/08/2020 15:52

The Boeing Company
ELLE Sample #: WW 1312325
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	2-Butanone	78-93-3	50	U	50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	**cis-1,2-Dichloroethene**	156-59-2	**9.0**		2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	**Vinyl Chloride**	75-01-4	**84**		2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	Ethane	74-84-0	5.0	U	5.0	1
07105	**Ethene**	74-85-1	**19**		5.0	1
07105	**Methane**	74-82-8	**2,700**	**E**	5.0	1

Trial ID: DL

Sample Description: **E-6-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/08/2020 15:52

The Boeing Company
ELLE Sample #: WW 1312325
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	100	U	100	20
07105	Ethane	74-84-0	100	U	100	20
07105	Ethene	74-85-1	100	U	100	20
07105	**Methane**	74-82-8	**3,700**		100	20
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	Sulfate	14808-79-8	5.0	U	5.0	5
00228	**Sulfate**	14808-79-8	**2.1**		1.0	1
	SM 5310 C-2011		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**9.2**		1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201391AA	05/18/2020 17:24	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	H201391AA	05/18/2020 17:46	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201391AA	05/18/2020 17:23	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H201391AA	05/18/2020 17:45	Jennifer K Howe	10
07105	AMEE by RSK-175	RSKSOP-175 modified	1	201340003A	05/13/2020 14:00	Esther Kathryn Lane	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	201340003A	05/13/2020 16:44	Esther Kathryn Lane	20
00228	Sulfate	EPA 300.0	1	20131135209B	05/11/2020 10:57	Kevin Litwa	5
00228	Sulfate	EPA 300.0	2	20131135209B	05/14/2020 03:34	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20139667606A	05/19/2020 14:26	Drew M Gerhart	1

Sample Description: **E-7-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/08/2020 14:00

The Boeing Company
ELLE Sample #: WW 1312326
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**90**		50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	**2-Butanone**	78-93-3	**4,000**	**E**	50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10
11996	Chlorobenzene	108-90-7	5.0	U	5.0	10
11996	Chloroethane	75-00-3	5.0	U	5.0	10
11996	Chloroform	67-66-3	2.0	U	2.0	10
11996	Chloromethane	74-87-3	5.0	U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0	U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0	U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0	U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0	U	2.0	10
11996	**cis-1,2-Dichloroethene**	156-59-2	**20**		2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0	U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0	U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0	U	2.0	10
11996	Ethylbenzene	100-41-4	5.0	U	5.0	10
11996	2-Hexanone	591-78-6	50	U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50	U	50	10
11996	Methylene Chloride	75-09-2	5.0	U	5.0	10
11996	Styrene	100-42-5	5.0	U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0	U	2.0	10
11996	**Tetrachloroethene**	127-18-4	**3.8**		2.0	10
11996	Toluene	108-88-3	2.0	U	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0	U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0	U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0	U	2.0	10
11996	**Trichloroethene**	79-01-6	**23**		2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0	U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0	U	5.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10
11996	m+p-Xylene	179601-23-1	5.0	U	5.0	10
11996	o-Xylene	95-47-6	5.0	U	5.0	10
Trial ID: DL						
11996	Acetone	67-64-1	500	U	500	100
11996	Benzene	71-43-2	20	U	20	100
11996	Bromodichloromethane	75-27-4	50	U	50	100

Sample Description: **E-7-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/08/2020 14:00

The Boeing Company
ELLE Sample #: WW 1312326
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Bromoform	75-25-2	50	U	50	100
11996	Bromomethane	74-83-9	50	U	50	100
11996	**2-Butanone**	78-93-3	**4,600**		500	100
11996	Carbon Disulfide	75-15-0	50	U	50	100
11996	Carbon Tetrachloride	56-23-5	20	U	20	100
11996	Chlorobenzene	108-90-7	50	U	50	100
11996	Chloroethane	75-00-3	50	U	50	100
11996	Chloroform	67-66-3	20	U	20	100
11996	Chloromethane	74-87-3	50	U	50	100
11996	Dibromochloromethane	124-48-1	50	U	50	100
11996	1,1-Dichloroethane	75-34-3	50	U	50	100
11996	1,2-Dichloroethane	107-06-2	20	U	20	100
11996	1,1-Dichloroethene	75-35-4	20	U	20	100
11996	**cis-1,2-Dichloroethene**	156-59-2	**23**		20	100
11996	trans-1,2-Dichloroethene	156-60-5	20	U	20	100
11996	1,2-Dichloropropane	78-87-5	50	U	50	100
11996	cis-1,3-Dichloropropene	10061-01-5	20	U	20	100
11996	trans-1,3-Dichloropropene	10061-02-6	20	U	20	100
11996	Ethylbenzene	100-41-4	50	U	50	100
11996	2-Hexanone	591-78-6	500	U	500	100
11996	4-Methyl-2-pentanone	108-10-1	500	U	500	100
11996	Methylene Chloride	75-09-2	50	U	50	100
11996	Styrene	100-42-5	50	U	50	100
11996	1,1,2,2-Tetrachloroethane	79-34-5	20	U	20	100
11996	Tetrachloroethene	127-18-4	20	U	20	100
11996	Toluene	108-88-3	20	U	20	100
11996	112Trichloro122Trifluoroethane	76-13-1	50	U	50	100
11996	1,1,1-Trichloroethane	71-55-6	50	U	50	100
11996	1,1,2-Trichloroethane	79-00-5	20	U	20	100
11996	**Trichloroethene**	79-01-6	**27**		20	100
11996	Trichlorofluoromethane	75-69-4	50	U	50	100
11996	Vinyl Acetate	108-05-4	50	U	50	100
11996	Vinyl Chloride	75-01-4	20	U	20	100
11996	m+p-Xylene	179601-23-1	50	U	50	100
11996	o-Xylene	95-47-6	50	U	50	100

The value reported for acetone is an estimated maximum possible concentration due to interference from a non-target compound.

GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	Ethane	74-84-0	5.0	U	5.0	1
07105	**Ethene**	74-85-1	**6.0**		5.0	1
07105	**Methane**	74-82-8	**10,000**	**E**	5.0	1

Sample Description: **E-7-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/08/2020 14:00

The Boeing Company
ELLE Sample #: WW 1312326
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
Trial ID: DL						
07105	Acetylene	74-86-2	1,000	U	1,000	200
07105	Ethane	74-84-0	1,000	U	1,000	200
07105	Ethene	74-85-1	1,000	U	1,000	200
07105	**Methane**	74-82-8	**15,000**		1,000	200
Trial ID: RE						
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	Ethane	74-84-0	5.0	U	5.0	1
07105	**Ethene**	74-85-1	**7.5**		5.0	1
07105	**Methane**	74-82-8	**15,000**	**E**	5.0	1

Preservation requirements were not met.
A preserved vial was submitted for analysis. However, the pH at the time of analysis was 4.

A target analyte(s) in the continuing calibration verification standard is outside the QC acceptance limits for Trial 1. Since the result is high and the target analyte(s) is not detected in the sample, the data is reported.

The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
Acetylene	+17%

Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**727**		500	500
	SM 5310 C-2011		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**20,900**		1,000	1000

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201391AA	05/18/2020 18:07	Jennifer K Howe	10
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	H201391AA	05/18/2020 18:29	Jennifer K Howe	100
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201391AA	05/18/2020 18:06	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H201391AA	05/18/2020 18:28	Jennifer K Howe	100
07105	AMEE by RSK-175	RSKSOP-175 modified	3-RE	201320006A	05/11/2020 15:57	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	201340003A	05/13/2020 14:22	Johanna C Kennedy	1

Sample Description: **E-7-0520 Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/08/2020 14:00

The Boeing Company
ELLE Sample #: WW 1312326
ELLE Group #: 2099064
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	201340003A	05/13/2020 17:02	Johanna C Kennedy	200
00228	Sulfate	EPA 300.0	1	20132135109A	05/11/2020 14:23	Kevin Litwa	500
00273	Total Organic Carbon	SM 5310 C-2011	1	20139667606A	05/19/2020 14:39	Drew M Gerhart	1000

Sample Description: **Trip Blanks Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020

The Boeing Company
ELLE Sample #: WW 1312327
ELLE Group #: 2099064
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

Sample Description: **Trip Blanks Water**
Boeing Portland 025116.120.412

Project Name: **Boeing of Portland/025116.120.412**

Submittal Date/Time: 05/09/2020 10:56
Collection Date/Time: 05/07/2020

The Boeing Company
ELLE Sample #: WW 1312327
ELLE Group #: 2099064
Matrix: Water

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201391AA	05/18/2020 11:59	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201391AA	05/18/2020 11:58	Jennifer K Howe	1

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/29/2020 09:20

Group Number: 2099064

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 was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: H201391AA	Sample number(s): 1312317-1312327		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/29/2020 09:20

Group Number: 2099064

Method Blank (continued)

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: H201401AA	Sample number(s): 1312319		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5
Batch number: 201320006A	Sample number(s): 1312326		
Acetylene	5.0	U	5.0
Ethane	5.0	U	5.0
Ethene	5.0	U	5.0
Methane	5.0	U	5.0

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/29/2020 09:20

Group Number: 2099064

Method Blank (continued)

Analysis Name	Result	LOQ
	ug/l	ug/l
Batch number: 201340003A	Sample number(s): 1312324-1312326	
Acetylene	5.0 U	5.0
Ethane	5.0 U	5.0
Ethene	5.0 U	5.0
Methane	5.0 U	5.0
	mg/l	mg/l
Batch number: 201350018A	Sample number(s): 1312323	
Diesel/#2 Fuel w/Si Gel	0.10 U	0.10
DRO C12-C24 w/Si Gel	0.10 U	0.10
Motor Oil w/Si Gel	0.25 U	0.25
Batch number: 20131135117A	Sample number(s): 1312323	
Nitrate Nitrogen	0.10 U	0.10
Sulfate	1.0 U	1.0
Batch number: 20131135209B	Sample number(s): 1312324-1312325	
Sulfate	1.0 U	1.0
Batch number: 20132135109A	Sample number(s): 1312326	
Sulfate	1.0 U	1.0
Batch number: 20139667606A	Sample number(s): 1312323-1312326	
Total Organic Carbon	1.0 U	1.0

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: H201391AA	Sample number(s): 1312317-1312327								
Acetone	37.5	36.5	37.5	36.54	97	97	60-146	0	30
Benzene	5.00	5.46	5.00	5.40	109	108	80-120	1	30
Bromodichloromethane	5.00	5.37	5.00	5.31	107	106	73-124	1	30
Bromoform	5.00	5.20	5.00	5.04	104	101	49-144	3	30
Bromomethane	5.00	5.53	5.00	5.42	111	108	60-136	2	30
2-Butanone	37.5	40.08	37.5	42.46	107	113	59-141	6	30
Carbon Disulfide	5.00	5.45	5.00	5.39	109	108	67-130	1	30
Carbon Tetrachloride	5.00	5.34	5.00	5.23	107	105	64-141	2	30
Chlorobenzene	5.00	5.33	5.00	5.23	107	105	80-120	2	30
Chloroethane	5.00	5.67	5.00	5.64	113	113	63-120	0	30
Chloroform	5.00	5.40	5.00	5.41	108	108	80-120	0	30
Chloromethane	5.00	5.89	5.00	5.75	118	115	56-124	2	30
Dibromochloromethane	5.00	5.37	5.00	5.27	107	105	64-138	2	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/29/2020 09:20

Group Number: 2099064

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1-Dichloroethane	5.00	5.54	5.00	5.50	111	110	74-120	1	30
1,2-Dichloroethane	5.00	5.17	5.00	5.29	103	106	69-122	2	30
1,1-Dichloroethene	5.00	5.26	5.00	5.20	105	104	80-131	1	30
cis-1,2-Dichloroethene	5.00	5.54	5.00	5.51	111	110	80-122	1	30
trans-1,2-Dichloroethene	5.00	5.33	5.00	5.21	107	104	80-122	2	30
1,2-Dichloropropane	5.00	5.68	5.00	5.66	114	113	80-120	0	30
cis-1,3-Dichloropropene	5.00	4.96	5.00	5.00	99	100	67-121	1	30
trans-1,3-Dichloropropene	5.00	4.81	5.00	4.94	96	99	61-129	3	30
Ethylbenzene	5.00	5.23	5.00	5.17	105	103	80-120	1	30
2-Hexanone	25	31.16	25	30.98	125	124	52-140	1	30
4-Methyl-2-pentanone	25	29.32	25	28.57	117	114	55-140	3	30
Methylene Chloride	5.00	5.37	5.00	5.39	107	108	80-120	0	30
Styrene	5.00	5.10	5.00	5.18	102	104	80-120	2	30
1,1,2,2-Tetrachloroethane	5.00	5.49	5.00	5.53	110	111	75-123	1	30
Tetrachloroethene	5.00	5.26	5.00	5.22	105	104	80-120	1	30
Toluene	5.00	5.36	5.00	5.28	107	106	80-120	2	30
112Trichloro122Trifluoroethane	5.00	5.02	5.00	4.95	100	99	75-133	1	30
1,1,1-Trichloroethane	5.00	5.14	5.00	5.10	103	102	78-126	1	30
1,1,2-Trichloroethane	5.00	5.59	5.00	5.49	112	110	80-120	2	30
Trichloroethene	5.00	5.25	5.00	5.29	105	106	80-120	1	30
Trichlorofluoromethane	5.00	6.06	5.00	5.88	121	118	62-136	3	30
Vinyl Acetate	12.5	10.29	12.5	10.25	82	82	38-145	0	30
Vinyl Chloride	5.00	5.76	5.00	5.68	115	114	60-125	1	30
m+p-Xylene	10	10.65	10	10.54	107	105	80-120	1	30
o-Xylene	5.00	5.06	5.00	5.06	101	101	80-120	0	30
Batch number: H201401AA	Sample number(s): 1312319								
Acetone	37.5	33.45	37.5	33.34	89	89	60-146	0	30
Benzene	5.00	5.21	5.00	5.11	104	102	80-120	2	30
Bromodichloromethane	5.00	5.07	5.00	5.01	101	100	73-124	1	30
Bromoform	5.00	4.60	5.00	4.43	92	89	49-144	4	30
Bromomethane	5.00	5.29	5.00	5.19	106	104	60-136	2	30
2-Butanone	37.5	36.9	37.5	36.24	98	97	59-141	2	30
Carbon Disulfide	5.00	5.13	5.00	4.96	103	99	67-130	3	30
Carbon Tetrachloride	5.00	5.08	5.00	4.95	102	99	64-141	2	30
Chlorobenzene	5.00	5.07	5.00	5.02	101	100	80-120	1	30
Chloroethane	5.00	5.54	5.00	5.33	111	107	63-120	4	30
Chloroform	5.00	5.18	5.00	5.17	104	103	80-120	0	30
Chloromethane	5.00	5.36	5.00	5.19	107	104	56-124	3	30
Dibromochloromethane	5.00	5.04	5.00	4.87	101	97	64-138	3	30
1,1-Dichloroethane	5.00	5.31	5.00	5.19	106	104	74-120	2	30
1,2-Dichloroethane	5.00	4.98	5.00	4.92	100	98	69-122	1	30
1,1-Dichloroethene	5.00	4.97	5.00	4.95	99	99	80-131	0	30
cis-1,2-Dichloroethene	5.00	5.34	5.00	5.24	107	105	80-122	2	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/29/2020 09:20

Group Number: 2099064

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
trans-1,2-Dichloroethene	5.00	4.99	5.00	4.90	100	98	80-122	2	30
1,2-Dichloropropane	5.00	5.40	5.00	5.37	108	107	80-120	1	30
cis-1,3-Dichloropropene	5.00	4.88	5.00	4.76	98	95	67-121	3	30
trans-1,3-Dichloropropene	5.00	4.71	5.00	4.59	94	92	61-129	3	30
Ethylbenzene	5.00	4.98	5.00	4.88	100	98	80-120	2	30
2-Hexanone	25	25.13	25	24.81	101	99	52-140	1	30
4-Methyl-2-pentanone	25	25.4	25	23.95	102	96	55-140	6	30
Methylene Chloride	5.00	5.18	5.00	5.10	104	102	80-120	1	30
Styrene	5.00	5.04	5.00	4.95	101	99	80-120	2	30
1,1,2,2-Tetrachloroethane	5.00	5.47	5.00	5.30	109	106	75-123	3	30
Tetrachloroethene	5.00	4.91	5.00	4.91	98	98	80-120	0	30
Toluene	5.00	5.10	5.00	5.02	102	100	80-120	2	30
112Trichloro122Trifluoroethane	5.00	4.78	5.00	4.77	96	95	75-133	0	30
1,1,1-Trichloroethane	5.00	4.96	5.00	4.83	99	97	78-126	3	30
1,1,2-Trichloroethane	5.00	5.32	5.00	5.15	106	103	80-120	3	30
Trichloroethene	5.00	5.02	5.00	5.02	100	100	80-120	0	30
Trichlorofluoromethane	5.00	5.71	5.00	5.61	114	112	62-136	2	30
Vinyl Acetate	12.5	10.67	12.5	10.36	85	83	38-145	3	30
Vinyl Chloride	5.00	5.40	5.00	5.29	108	106	60-125	2	30
m+p-Xylene	10	10.05	10	10.05	101	100	80-120	0	30
o-Xylene	5.00	4.92	5.00	4.86	98	97	80-120	1	30
	ug/l	**ug/l**	**ug/l**	**ug/l**					
Batch number: 201320006A	Sample number(s): 1312326								
Acetylene	51.25	51.84	51.25	51.5	101	100	57-146	1	20
Ethane	59.39	59.57	59.39	59.74	100	101	85-115	0	20
Ethene	60.4	60.76	60.4	60.83	101	101	83-115	0	20
Methane	59.42	63	59.42	63.22	106	106	85-115	0	20
Batch number: 201340003A	Sample number(s): 1312324-1312326								
Acetylene	51.25	54.66	51.25	54.42	107	106	57-146	0	20
Ethane	59.39	58.68	59.39	59.15	99	100	85-115	1	20
Ethene	60.4	59.54	60.4	60.15	99	100	83-115	1	20
Methane	59.42	62.85	59.42	63.71	106	107	85-115	1	20
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 201350018A	Sample number(s): 1312323								
Diesel/#2 Fuel w/Si Gel	0.800	0.632	0.800	0.664	79	83	60-120	5	20
DRO C12-C24 w/Si Gel	0.800	0.507	0.800	0.533	63	67	60-120	5	20
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20131135117A	Sample number(s): 1312323								
Nitrate Nitrogen	0.750	0.728			97		90-110		
Sulfate	7.50	7.32			98		90-110		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/29/2020 09:20

Group Number: 2099064

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/l	LCS Conc mg/l	LCSD Spike Added mg/l	LCSD Conc mg/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 20131135209B	Sample number(s): 1312324-1312325								
Sulfate	7.50	7.91			105		90-110		
Batch number: 20132135109A	Sample number(s): 1312326								
Sulfate	7.50	7.86			105		90-110		
Batch number: 20139667606A	Sample number(s): 1312323-1312326								
Total Organic Carbon	25	23.6			94		91-113		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 20131135117A	Sample number(s): 1312323 UNSPK: 1312323									
Nitrate Nitrogen	0.50 U	2.50	2.38			95		90-110		
Sulfate	5.0 U	25	24.6			98		90-110		
Batch number: 20132135109A	Sample number(s): 1312326 UNSPK: 1312326									
Sulfate	727.07	2500	2972.01			90		90-110		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 20131135117A	Sample number(s): 1312323 BKG: 1312323			
Nitrate Nitrogen	0.50 U	0.50 U	0 (1)	15
Sulfate	5.0 U	5.0 U	0 (1)	15
Batch number: 20132135109A	Sample number(s): 1312326 BKG: 1312326			
Sulfate	727.07	688.67	5 (1)	15

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/29/2020 09:20

Group Number: 2099064

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: H201391AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1312317	102	102	100	98
1312318	105	106	98	94
1312319	97	99	98	97
1312320	98	101	98	99
1312320DL	99	102	101	97
1312321	96	100	101	99
1312321DL	101	102	101	98
1312322	96	97	102	96
1312322DL	100	101	100	98
1312323	102	104	100	99
1312324	100	99	101	97
1312324DL	101	103	102	99
1312325	102	103	100	97
1312325DL	101	104	100	94
1312326	99	102	100	98
1312326DL	102	103	98	98
1312327	106	107	99	94
Blank	104	106	100	93
LCS	101	103	101	98
LCSD	99	104	101	97
Limits:	80-120	80-120	80-120	80-120

Analysis Name: 8260C Boeing 38
Batch number: H201401AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1312319DL	102	102	100	97
Blank	103	101	98	93
LCS	100	102	101	98
LCSD	100	100	100	97
Limits:	80-120	80-120	80-120	80-120

Analysis Name: AMEE by RSK-175
Batch number: 201320006A

	Propene
1312326RE	1693*
Blank	101
LCS	105
LCSD	103

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/29/2020 09:20

Group Number: 2099064

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: AMEE by RSK-175
Batch number: 201320006A

Limits: 28-140

Analysis Name: AMEE by RSK-175
Batch number: 201340003A

	Propene
1312324	68
1312324DL	97
1312325	82
1312325DL	96
1312326	886*
1312326DL	99
Blank	101
LCS	100
LCSD	101
Limits:	28-140

Analysis Name: NWTPH-Dx Water w/ Silica Gel
Batch number: 201350018A

	Chlorobenzene	Orthoterphenyl
1312323	61	990*
Blank	60	86
LCS	59	87
LCSD	62	91
Limits:	50-150	50-150

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 13419 For Eurofins Lancaster Laboratories Environmental use only Group # 2079064 Sample # 312317-27
Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Gresham, Oregon
Site Project: Boeing of Portland
Site Program/#: 025116.120.412
Boeing PM: Debbie Traeger
Consultant Contact: Chris Himmel
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL # of Coolers: _____

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: VOC (8011,21)	TOC	Sulfate	Nitrate	AMEE	TPH-Dx						(5) Remarks/Comments
BOP-78i-0520	5/7/20	17:05	H_2O	3	X	X	X		X							
BOP-79i-0520		17:15		3	X	X										
BOP-84i-0520		1520		3	X											
BOP-85i-0520		1620		3	X											
BOP-86i-0520		1555		3	X											
BOP-87i-0520		1645		3	X											
LAI-8-0520	5/8/20	12:00		9	X	X	X	X		X						
BOP-10i-0520		1639		9	X	X	X		X							
E-6-0520		1552		9	X	X	X		X							
E-7-0520		1400		9	X	X	X		X							
Trip Blanks	—	—		2												

Page 43 of 46

(6) Turnaround Time Requested (please circle)

Standard | 5 day | 4 day
72 hour | 48 hour | 24 hour
Date needed: _____

				(7)
Relinquished by: WHL	Date/Time 5/8 17:25	Received by:	Date/Time	
Relinquished by:	Date/Time	Received by:	Date/Time	
Relinquished by:	Date/Time	Received by: 5/9/20 1056	Date/Time	
Relinquished by commercial carrier (circle): UPS FedEx Other: _____		Temperature upon Receipt: 0.5 °C Custody Seals Intact?: Yes No		

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.

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 284105

Group Number(s): 2099064

Client: BOEING

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Date:	05/09/2020
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	No	Sample Date/Times match COC:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	HCl
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Julissa Rivera-Santa

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	46730060WS	0.5	IR	Wet	Y	Bagged	N

Sample Date/Time Discrepancy Details

Sample ID on COC	Date/Time on Label	Comments
BOP-85i	5/07/2020 15:55	1 OF 3 HAS THE WRONG TIME
BOP-86i	5/07/2020 16:20	1 OF 3 HAS THE WRONG TIME
BOP-10i	5/08/2020 16:38	
E-6	5/08/2020 15:55	

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

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

Tests 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.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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. 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. 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.

eurofins | Lancaster Laboratories Environmental

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is less than the LOQ
K2	Continuing Calibration Blank is above the QC limit and the sample result is less than the LOQ
K3	Initial Calibration Verification is above the QC limit and the sample result is less than the LOQ
K4	Continuing Calibration Verification is above the QC limit and the sample result is less than the LOQ
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 9U4-26
Seattle WA 98124-2207

Report Date: May 21, 2020 10:53

Project: Boeing of Portland/0025116.120.412

Account #: 13419
Group Number: 2099202
PO Number: 0025116.120.412
State of Sample Origin: OR

Electronic Copy To	Landau	Attn: Chris Kimmel
Electronic Copy To	Landau Associates	Attn: Dani Jorgensen
Electronic Copy To	Landau	Attn: Erin Waibel
Electronic Copy To	Landau Associates	Attn: Laura Lafferty

Respectfully Submitted,

Kay Hower

(717) 556-7364

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
BOP-09i-0520 Water	05/11/2020 08:53	1313106
BOP-72i-0520 Water	05/11/2020 14:56	1313107
BOP-72i-0520 Total Metals Water	05/11/2020 14:56	1313108
BOP-72i-0520 Dissolved Metals Water	05/11/2020 14:56	1313109
BOP-73i-0520 Water	05/11/2020 10:54	1313110
BOP-73i-0520 Total Metals Water	05/11/2020 10:54	1313111
BOP-73i-0520 Dissolved Metals Water	05/11/2020 10:54	1313112
BOP-74i-0520 Water	05/11/2020 12:46	1313113
BOP-74i-0520 Total Metals Water	05/11/2020 12:46	1313114
BOP-74i-0520 Dissolved Metals Water	05/11/2020 12:46	1313115
BOP-75i-0520 Water	05/11/2020 13:52	1313116
BOP-75i-0520 Total Metals Water	05/11/2020 13:52	1313117
BOP-75i-0520 Dissolved Metals Water	05/11/2020 13:52	1313118
BOP-76i-0520 Water	05/11/2020 10:06	1313119
BOP-76i-0520 Total Metals Water	05/11/2020 10:06	1313120
BOP-76i-0520 Dissolved Metals Water	05/11/2020 10:06	1313121
BOP-77i-0520 Water	05/11/2020 11:39	1313122
BOP-77i-0520 Total Metals Water	05/11/2020 11:39	1313123
BOP-77i-0520 Dissolved Metals Water	05/11/2020 11:39	1313124
Trip Blanks Water	05/11/2020	1313125

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Project Name: Boeing of Portland/0025116.120.412
ELLE Group #: 2099202

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

RSKSOP-175 modified, GC Miscellaneous

Sample #s: 1313116, 1313119

The response for Acetylene in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported for trial 1.

EPA 300.0, Wet Chemistry

Sample #s: 1313113

Sample was originally analyzed within the 48 hour holding time; however due to analyst error sample was analyzed at a dilution factor of five instead of client requested dilution of one. Sample was reanalyzed past hold at the correct DF1 on 05/15/2020 with a result of 0.38 mg/l.

Sample #s: 1313107, 1313110, 1313116, 1313119, 1313122

The sample was reanalyzed at a 1X dilution on 5/14/20 with a result of 0.10 U mg/l.

Batch #: 20133076109B (Sample number(s): 1313110, 1313113 UNSPK: 1313110 BKG: 1313110)

The recovery(ies) for the following analyte(s) in the MS exceeded the acceptance window indicating a positive bias: Nitrate Nitrogen

Sample Description: **BOP-09i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 08:53

The Boeing Company
ELLE Sample #: WW 1313106
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**8.8**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**380**	**E**	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.1**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**130**	**E**	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.6**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**1.0**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	Acetone	67-64-1	100	U	100	20
11996	Benzene	71-43-2	4.0	U	4.0	20
11996	Bromodichloromethane	75-27-4	10	U	10	20
11996	Bromoform	75-25-2	10	U	10	20
11996	Bromomethane	74-83-9	10	U	10	20
11996	**2-Butanone**	78-93-3	**370**		100	20
11996	Carbon Disulfide	75-15-0	10	U	10	20
11996	Carbon Tetrachloride	56-23-5	4.0	U	4.0	20

Sample Description: **BOP-09i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 08:53

The Boeing Company
ELLE Sample #: WW 1313106
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Chlorobenzene	108-90-7	10 U	10	20
11996	Chloroethane	75-00-3	10 U	10	20
11996	Chloroform	67-66-3	4.0 U	4.0	20
11996	Chloromethane	74-87-3	10 U	10	20
11996	Dibromochloromethane	124-48-1	10 U	10	20
11996	1,1-Dichloroethane	75-34-3	10 U	10	20
11996	1,2-Dichloroethane	107-06-2	4.0 U	4.0	20
11996	1,1-Dichloroethene	75-35-4	4.0 U	4.0	20
11996	cis-1,2-Dichloroethene	156-59-2	4.0 U	4.0	20
11996	trans-1,2-Dichloroethene	156-60-5	4.0 U	4.0	20
11996	1,2-Dichloropropane	78-87-5	10 U	10	20
11996	cis-1,3-Dichloropropene	10061-01-5	4.0 U	4.0	20
11996	trans-1,3-Dichloropropene	10061-02-6	4.0 U	4.0	20
11996	Ethylbenzene	100-41-4	10 U	10	20
11996	2-Hexanone	591-78-6	100 U	100	20
11996	4-Methyl-2-pentanone	108-10-1	100 U	100	20
11996	Methylene Chloride	75-09-2	10 U	10	20
11996	Styrene	100-42-5	10 U	10	20
11996	1,1,2,2-Tetrachloroethane	79-34-5	4.0 U	4.0	20
11996	Tetrachloroethene	127-18-4	4.0 U	4.0	20
11996	**Toluene**	108-88-3	**130**	4.0	20
11996	112Trichloro122Trifluoroethane	76-13-1	10 U	10	20
11996	1,1,1-Trichloroethane	71-55-6	10 U	10	20
11996	1,1,2-Trichloroethane	79-00-5	4.0 U	4.0	20
11996	Trichloroethene	79-01-6	4.0 U	4.0	20
11996	Trichlorofluoromethane	75-69-4	10 U	10	20
11996	Vinyl Acetate	108-05-4	10 U	10	20
11996	Vinyl Chloride	75-01-4	4.0 U	4.0	20
11996	m+p-Xylene	179601-23-1	10 U	10	20
11996	o-Xylene	95-47-6	10 U	10	20
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**21,000 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	1,000 U	1,000	200
07105	Ethane	74-84-0	1,000 U	1,000	200
07105	Ethene	74-85-1	1,000 U	1,000	200
07105	**Methane**	74-82-8	**30,000**	1,000	200
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00228	Sulfate	14808-79-8	5.0 U	5.0	5
00228	**Sulfate**	14808-79-8	**2.4**	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	

Sample Description: **BOP-09i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 08:53

The Boeing Company
ELLE Sample #: WW 1313106
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 5310 C-2011**		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**150**	100	100

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201391AA	05/18/2020 18:51	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	H201391AA	05/18/2020 19:13	Jennifer K Howe	20
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201391AA	05/18/2020 18:50	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H201391AA	05/18/2020 19:12	Jennifer K Howe	20
07105	AMEE by RSK-175	RSKSOP-175 modified	1	201340003A	05/13/2020 17:20	Esther Kathryn Lane	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	201340003A	05/14/2020 23:30	Esther Kathryn Lane	200
00228	Sulfate	EPA 300.0	1	20135076109A	05/14/2020 21:44	Niyati Desai	5
00228	Sulfate	EPA 300.0	2	20135076109A	05/18/2020 21:00	Kevin Litwa	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20140304501B	05/20/2020 12:33	Bethany Sandone	100

Sample Description: **BOP-72i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 14:56

The Boeing Company
ELLE Sample #: WW 1313107
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	**Acetone**	67-64-1	**13**	5.0	1
11996	**Benzene**	71-43-2	**0.3**	0.2	1
11996	Bromodichloromethane	75-27-4	0.5 U	0.5	1
11996	Bromoform	75-25-2	0.5 U	0.5	1
11996	Bromomethane	74-83-9	0.5 U	0.5	1
11996	2-Butanone	78-93-3	5.0 U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5 U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2 U	0.2	1
11996	Chlorobenzene	108-90-7	0.5 U	0.5	1
11996	Chloroethane	75-00-3	0.5 U	0.5	1
11996	Chloroform	67-66-3	0.2 U	0.2	1
11996	Chloromethane	74-87-3	0.5 U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5 U	0.5	1
11996	**1,1-Dichloroethane**	75-34-3	**1.7**	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2 U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2 U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**4.6**	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2 U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5 U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2 U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2 U	0.2	1
11996	Ethylbenzene	100-41-4	0.5 U	0.5	1
11996	2-Hexanone	591-78-6	5.0 U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0 U	5.0	1
11996	Methylene Chloride	75-09-2	0.5 U	0.5	1
11996	Styrene	100-42-5	0.5 U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2 U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2 U	0.2	1
11996	**Toluene**	108-88-3	**1.8**	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5 U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5 U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2 U	0.2	1
11996	Trichloroethene	79-01-6	0.2 U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5 U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5 U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**2.3**	0.2	1
11996	m+p-Xylene	179601-23-1	0.5 U	0.5	1
11996	o-Xylene	95-47-6	0.5 U	0.5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**13,000 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	500 U	500	100
07105	Ethane	74-84-0	500 U	500	100

Sample Description: **BOP-72i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 14:56

The Boeing Company
ELLE Sample #: WW 1313107
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Ethene	74-85-1	500 U	500	100
07105	**Methane**	74-82-8	**18,000**	500	100
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.50 U	0.50	5
	The sample was reanalyzed at a 1X dilution on 5/14/20 with a result of 0.10 U mg/l.				
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
	The sample was reanalyzed at a 1X dilution on 5/14/20 with a result of 0.10 U mg/l.				
00228	**Sulfate**	14808-79-8	**1.2**	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**9.1**	5.0	5
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201391AA	05/18/2020 13:47	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201391AA	05/18/2020 13:46	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	201340003A	05/13/2020 17:37	Esther Kathryn Lane	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	201340003A	05/14/2020 23:48	Esther Kathryn Lane	100
00368	Nitrate Nitrogen	EPA 300.0	1	20133076109A	05/13/2020 00:45	Clinton M Wilson	5
00368	Nitrate Nitrogen	EPA 300.0	2	20133076109A	05/14/2020 19:18	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20133076109A	05/14/2020 19:18	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20140304501B	05/19/2020 18:51	Bethany Sandone	5
01333	Sulfide	EPA 376.1	1	20135133301A	05/14/2020 14:10	Nicole Munsell	1

Sample Description: **BOP-72i-0520 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 14:56

The Boeing Company
ELLE Sample #: WW 1313108
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**41.9**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201331404404	05/14/2020 16:15	Cindy M Gehman	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	201331404404	05/14/2020 02:53	James L Mertz	1

Sample Description: **BOP-72i-0520 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 14:56

The Boeing Company
ELLE Sample #: WW 1313109
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**38.1**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201351486602	05/17/2020 16:11	Elaine F Stoltzfus	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	201351486602	05/14/2020 10:40	Annamaria Kuhns	1

Sample Description: **BOP-73i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 10:54

The Boeing Company
ELLE Sample #: WW 1313110
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	100	U	100	20
11996	Benzene	71-43-2	4.0	U	4.0	20
11996	Bromodichloromethane	75-27-4	10	U	10	20
11996	Bromoform	75-25-2	10	U	10	20
11996	Bromomethane	74-83-9	10	U	10	20
11996	2-Butanone	78-93-3	100	U	100	20
11996	Carbon Disulfide	75-15-0	10	U	10	20
11996	Carbon Tetrachloride	56-23-5	4.0	U	4.0	20
11996	Chlorobenzene	108-90-7	10	U	10	20
11996	Chloroethane	75-00-3	10	U	10	20
11996	Chloroform	67-66-3	4.0	U	4.0	20
11996	Chloromethane	74-87-3	10	U	10	20
11996	Dibromochloromethane	124-48-1	10	U	10	20
11996	1,1-Dichloroethane	75-34-3	10	U	10	20
11996	1,2-Dichloroethane	107-06-2	4.0	U	4.0	20
11996	1,1-Dichloroethene	75-35-4	4.0	U	4.0	20
11996	**cis-1,2-Dichloroethene**	156-59-2	**1,700**	**E**	4.0	20
11996	**trans-1,2-Dichloroethene**	156-60-5	**52**		4.0	20
11996	1,2-Dichloropropane	78-87-5	10	U	10	20
11996	cis-1,3-Dichloropropene	10061-01-5	4.0	U	4.0	20
11996	trans-1,3-Dichloropropene	10061-02-6	4.0	U	4.0	20
11996	Ethylbenzene	100-41-4	10	U	10	20
11996	2-Hexanone	591-78-6	100	U	100	20
11996	4-Methyl-2-pentanone	108-10-1	100	U	100	20
11996	Methylene Chloride	75-09-2	10	U	10	20
11996	Styrene	100-42-5	10	U	10	20
11996	1,1,2,2-Tetrachloroethane	79-34-5	4.0	U	4.0	20
11996	Tetrachloroethene	127-18-4	4.0	U	4.0	20
11996	Toluene	108-88-3	4.0	U	4.0	20
11996	112Trichloro122Trifluoroethane	76-13-1	10	U	10	20
11996	1,1,1-Trichloroethane	71-55-6	10	U	10	20
11996	1,1,2-Trichloroethane	79-00-5	4.0	U	4.0	20
11996	Trichloroethene	79-01-6	4.0	U	4.0	20
11996	Trichlorofluoromethane	75-69-4	10	U	10	20
11996	Vinyl Acetate	108-05-4	10	U	10	20
11996	**Vinyl Chloride**	75-01-4	**1,300**	**E**	4.0	20
11996	m+p-Xylene	179601-23-1	10	U	10	20
11996	o-Xylene	95-47-6	10	U	10	20
Trial ID: DL						
11996	Acetone	67-64-1	1,000	U	1,000	200
11996	Benzene	71-43-2	40	U	40	200
11996	Bromodichloromethane	75-27-4	100	U	100	200
11996	Bromoform	75-25-2	100	U	100	200
11996	Bromomethane	74-83-9	100	U	100	200
11996	2-Butanone	78-93-3	1,000	U	1,000	200
11996	Carbon Disulfide	75-15-0	100	U	100	200
11996	Carbon Tetrachloride	56-23-5	40	U	40	200
11996	Chlorobenzene	108-90-7	100	U	100	200

Sample Description: **BOP-73i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 10:54

The Boeing Company
ELLE Sample #: WW 1313110
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Chloroethane	75-00-3	100 U	100	200
11996	Chloroform	67-66-3	40 U	40	200
11996	Chloromethane	74-87-3	100 U	100	200
11996	Dibromochloromethane	124-48-1	100 U	100	200
11996	1,1-Dichloroethane	75-34-3	100 U	100	200
11996	1,2-Dichloroethane	107-06-2	40 U	40	200
11996	1,1-Dichloroethene	75-35-4	40 U	40	200
11996	**cis-1,2-Dichloroethene**	156-59-2	**1,700**	40	200
11996	**trans-1,2-Dichloroethene**	156-60-5	**47**	40	200
11996	1,2-Dichloropropane	78-87-5	100 U	100	200
11996	cis-1,3-Dichloropropene	10061-01-5	40 U	40	200
11996	trans-1,3-Dichloropropene	10061-02-6	40 U	40	200
11996	Ethylbenzene	100-41-4	100 U	100	200
11996	2-Hexanone	591-78-6	1,000 U	1,000	200
11996	4-Methyl-2-pentanone	108-10-1	1,000 U	1,000	200
11996	Methylene Chloride	75-09-2	100 U	100	200
11996	Styrene	100-42-5	100 U	100	200
11996	1,1,2,2-Tetrachloroethane	79-34-5	40 U	40	200
11996	Tetrachloroethene	127-18-4	40 U	40	200
11996	Toluene	108-88-3	40 U	40	200
11996	112Trichloro122Trifluoroethane	76-13-1	100 U	100	200
11996	1,1,1-Trichloroethane	71-55-6	100 U	100	200
11996	1,1,2-Trichloroethane	79-00-5	40 U	40	200
11996	Trichloroethene	79-01-6	40 U	40	200
11996	Trichlorofluoromethane	75-69-4	100 U	100	200
11996	Vinyl Acetate	108-05-4	100 U	100	200
11996	**Vinyl Chloride**	75-01-4	**1,400**	40	200
11996	m+p-Xylene	179601-23-1	100 U	100	200
11996	o-Xylene	95-47-6	100 U	100	200
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	**Ethane**	74-84-0	**120**	5.0	1
07105	**Ethene**	74-85-1	**1,900 E**	5.0	1
07105	**Methane**	74-82-8	**11,000 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	500 U	500	100
07105	Ethane	74-84-0	500 U	500	100
07105	**Ethene**	74-85-1	**2,200**	500	100
07105	**Methane**	74-82-8	**15,000**	500	100
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.50 U	0.50	5
	The sample was reanalyzed at a 1X dilution on 5/14/20 with a result of 0.10 U mg/l.				
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1

Sample Description: **BOP-73i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 10:54

The Boeing Company
ELLE Sample #: WW 1313110
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
	The sample was reanalyzed at a 1X dilution on 5/14/20 with a result of 0.10 U mg/l.				
00228	Sulfate	14808-79-8	1.0 U	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**2.9**	1.0	1
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201391AA	05/18/2020 19:34	Jennifer K Howe	20
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	H201391AA	05/18/2020 19:56	Jennifer K Howe	200
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201391AA	05/18/2020 19:33	Jennifer K Howe	20
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H201391AA	05/18/2020 19:55	Jennifer K Howe	200
07105	AMEE by RSK-175	RSKSOP-175 modified	1	201340003A	05/13/2020 17:55	Esther Kathryn Lane	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	201340003A	05/15/2020 00:07	Esther Kathryn Lane	100
00368	Nitrate Nitrogen	EPA 300.0	1	20133076109B	05/13/2020 02:00	Clinton M Wilson	5
00368	Nitrate Nitrogen	EPA 300.0	2	20133076109B	05/14/2020 19:35	Samantha Faverio	1
00228	Sulfate	EPA 300.0	1	20133076109B	05/14/2020 19:35	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20140304501B	05/19/2020 19:30	Bethany Sandone	1
01333	Sulfide	EPA 376.1	1	20136133301A	05/15/2020 06:33	Nicole Munsell	1

Sample Description: **BOP-73i-0520 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 10:54

The Boeing Company
ELLE Sample #: WW 1313111
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**5.48**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201331404404	05/14/2020 16:19	Cindy M Gehman	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	201331404404	05/14/2020 02:53	James L Mertz	1

Sample Description: **BOP-73i-0520 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 10:54

The Boeing Company
ELLE Sample #: WW 1313112
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**2.88**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201351486602	05/18/2020 21:33	Elaine F Stoltzfus	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	201351486602	05/14/2020 10:40	Annamaria Kuhns	1

Sample Description: **BOP-74i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 12:46

The Boeing Company
ELLE Sample #: WW 1313113
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**34**		5.0	1
11996	**Benzene**	71-43-2	**2.6**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**95**		5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	**Chloroethane**	75-00-3	**0.6**		0.5	1
11996	**Chloroform**	67-66-3	**0.5**		0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**2.7**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	**2-Hexanone**	591-78-6	**12**		5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	**Methylene Chloride**	75-09-2	**1.2**		0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**3.9**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**1.4**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	Ethane	74-84-0	5.0	U	5.0	1
07105	Ethene	74-85-1	5.0	U	5.0	1
07105	**Methane**	74-82-8	**15,000**	**E**	5.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	1,000	U	1,000	200

Sample Description: **BOP-74i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 12:46

The Boeing Company
ELLE Sample #: WW 1313113
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Ethane	74-84-0	1,000 U	1,000	200
07105	Ethene	74-85-1	1,000 U	1,000	200
07105	**Methane**	74-82-8	**19,000**	1,000	200
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.50 U	0.50	5
	Sample was originally analyzed within the 48 hour holding time; however due to analyst error sample was analyzed at a dilution factor of five instead of client requested dilution of one. Sample was reanalyzed past hold at the correct DF1 on 05/15/2020 with a result of 0.38 mg/l.				
00368	**Nitrate Nitrogen**	14797-55-8	**0.38**	0.10	1
	Sample was originally analyzed within the 48 hour holding time; however due to analyst error sample was analyzed at a dilution factor of five instead of client requested dilution of one. Sample was reanalyzed past hold at the correct DF1 on 05/15/2020 with a result of 0.38 mg/l.				
00228	**Sulfate**	14808-79-8	**23.3**	5.0	5
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**646**	250	250
	EPA 376.1		**mg/l**	**mg/l**	
01333	**Sulfide**	18496-25-8	**5.0**	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201391AA	05/18/2020 20:18	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201391AA	05/18/2020 20:17	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	201340003A	05/13/2020 18:13	Esther Kathryn Lane	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	201340003A	05/15/2020 00:25	Esther Kathryn Lane	200
00368	Nitrate Nitrogen	EPA 300.0	1	20133076109B	05/13/2020 02:56	Clinton M Wilson	5
00368	Nitrate Nitrogen	EPA 300.0	2	20133076109B	05/15/2020 15:52	Samantha Faverio	1
00228	Sulfate	EPA 300.0	1	20133076109B	05/13/2020 02:56	Clinton M Wilson	5
00273	Total Organic Carbon	SM 5310 C-2011	1	20140304501B	05/19/2020 19:43	Bethany Sandone	250
01333	Sulfide	EPA 376.1	1	20136133301A	05/15/2020 06:33	Nicole Munsell	1

Sample Description: **BOP-74i-0520 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 12:46

The Boeing Company
ELLE Sample #: WW 1313114
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**92.7**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201331404404	05/14/2020 16:22	Cindy M Gehman	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	201331404404	05/14/2020 02:53	James L Mertz	1

Sample Description: **BOP-74i-0520 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 12:46

The Boeing Company
ELLE Sample #: WW 1313115
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**109**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201351486602	05/17/2020 16:17	Elaine F Stoltzfus	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	201351486602	05/14/2020 10:40	Annamaria Kuhns	1

Sample Description: **BOP-75i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 13:52

The Boeing Company
ELLE Sample #: WW 1313116
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	**Acetone**	67-64-1	**38**	5.0	1
11996	**Benzene**	71-43-2	**1.6**	0.2	1
11996	Bromodichloromethane	75-27-4	0.5 U	0.5	1
11996	Bromoform	75-25-2	0.5 U	0.5	1
11996	Bromomethane	74-83-9	0.5 U	0.5	1
11996	2-Butanone	78-93-3	5.0 U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5 U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2 U	0.2	1
11996	Chlorobenzene	108-90-7	0.5 U	0.5	1
11996	Chloroethane	75-00-3	0.5 U	0.5	1
11996	Chloroform	67-66-3	0.2 U	0.2	1
11996	Chloromethane	74-87-3	0.5 U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5 U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5 U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2 U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2 U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.3**	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2 U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5 U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2 U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2 U	0.2	1
11996	Ethylbenzene	100-41-4	0.5 U	0.5	1
11996	2-Hexanone	591-78-6	5.0 U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0 U	5.0	1
11996	Methylene Chloride	75-09-2	0.5 U	0.5	1
11996	Styrene	100-42-5	0.5 U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2 U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2 U	0.2	1
11996	**Toluene**	108-88-3	**0.6**	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5 U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5 U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2 U	0.2	1
11996	Trichloroethene	79-01-6	0.2 U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5 U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5 U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.3**	0.2	1
11996	m+p-Xylene	179601-23-1	0.5 U	0.5	1
11996	o-Xylene	95-47-6	0.5 U	0.5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	Ethene	74-85-1	5.0 U	5.0	1
07105	**Methane**	74-82-8	**14,000 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	500 U	500	100
07105	Ethane	74-84-0	500 U	500	100

Sample Description: **BOP-75i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 13:52

The Boeing Company
ELLE Sample #: WW 1313116
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Ethene	74-85-1	500 U	500	100
07105	**Methane**	74-82-8	**19,000**	500	100
	The response for Acetylene in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported for trial 1.				
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.50 U	0.50	5
	The sample was reanalyzed at a 1X dilution on 5/14/20 with a result of 0.10 U mg/l.				
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
	The sample was reanalyzed at a 1X dilution on 5/14/20 with a result of 0.10 U mg/l.				
00228	**Sulfate**	14808-79-8	**1.3**	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**57.9**	25.0	25
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201391AA	05/18/2020 14:09	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201391AA	05/18/2020 14:08	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	201340003A	05/13/2020 18:48	Esther Kathryn Lane	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	201340003A	05/15/2020 00:44	Esther Kathryn Lane	100
00368	Nitrate Nitrogen	EPA 300.0	1	20133076109A	05/12/2020 23:30	Clinton M Wilson	5
00368	Nitrate Nitrogen	EPA 300.0	2	20133076109A	05/14/2020 18:28	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20133076109A	05/14/2020 18:28	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20140304501B	05/19/2020 19:56	Bethany Sandone	25
01333	Sulfide	EPA 376.1	1	20136133301A	05/15/2020 06:33	Nicole Munsell	1

Sample Description: **BOP-75i-0520 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 13:52

The Boeing Company
ELLE Sample #: WW 1313117
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**35.4**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201331404404	05/14/2020 16:25	Cindy M Gehman	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	201331404404	05/14/2020 02:53	James L Mertz	1

Sample Description: **BOP-75i-0520 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 13:52

The Boeing Company
ELLE Sample #: WW 1313118
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**32.4**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201351486602	05/17/2020 16:27	Elaine F Stoltzfus	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	201351486602	05/14/2020 10:40	Annamaria Kuhns	1

Sample Description: **BOP-76i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 10:06

The Boeing Company
ELLE Sample #: WW 1313119
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	**Acetone**	67-64-1	**41**	5.0	1
11996	**Benzene**	71-43-2	**0.7**	0.2	1
11996	Bromodichloromethane	75-27-4	0.5 U	0.5	1
11996	Bromoform	75-25-2	0.5 U	0.5	1
11996	Bromomethane	74-83-9	0.5 U	0.5	1
11996	**2-Butanone**	78-93-3	**14**	5.0	1
11996	Carbon Disulfide	75-15-0	0.5 U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2 U	0.2	1
11996	Chlorobenzene	108-90-7	0.5 U	0.5	1
11996	Chloroethane	75-00-3	0.5 U	0.5	1
11996	Chloroform	67-66-3	0.2 U	0.2	1
11996	Chloromethane	74-87-3	0.5 U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5 U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5 U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2 U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2 U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**2.9**	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2 U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5 U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2 U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2 U	0.2	1
11996	Ethylbenzene	100-41-4	0.5 U	0.5	1
11996	2-Hexanone	591-78-6	5.0 U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0 U	5.0	1
11996	Methylene Chloride	75-09-2	0.5 U	0.5	1
11996	Styrene	100-42-5	0.5 U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2 U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2 U	0.2	1
11996	**Toluene**	108-88-3	**1.1**	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5 U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5 U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2 U	0.2	1
11996	Trichloroethene	79-01-6	0.2 U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5 U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5 U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**1.5**	0.2	1
11996	m+p-Xylene	179601-23-1	0.5 U	0.5	1
11996	o-Xylene	95-47-6	0.5 U	0.5	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	**Ethane**	74-84-0	**22**	5.0	1
07105	**Ethene**	74-85-1	**56**	5.0	1
07105	**Methane**	74-82-8	**12,000 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	500 U	500	100
07105	Ethane	74-84-0	500 U	500	100

Sample Description: **BOP-76i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 10:06

The Boeing Company
ELLE Sample #: WW 1313119
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Ethene	74-85-1	500 U	500	100
07105	**Methane**	74-82-8	**15,000**	500	100
	The response for Acetylene in the continuing calibration verification standard is outside the QC acceptance limits. Since the response is high indicating increased sensitivity, and the target analyte(s) is not detected in the sample, the data is reported for trial 1.				
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.50 U	0.50	5
	The sample was reanalyzed at a 1X dilution on 5/14/20 with a result of 0.10 U mg/l.				
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1
	The sample was reanalyzed at a 1X dilution on 5/14/20 with a result of 0.10 U mg/l.				
00228	Sulfate	14808-79-8	1.0 U	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**141**	100	100
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201401AA	05/19/2020 12:37	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201401AA	05/19/2020 12:36	Jennifer K Howe	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	201340003A	05/13/2020 19:06	Esther Kathryn Lane	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	201340003A	05/15/2020 01:02	Esther Kathryn Lane	100
00368	Nitrate Nitrogen	EPA 300.0	1	20133076109A	05/13/2020 00:26	Clinton M Wilson	5
00368	Nitrate Nitrogen	EPA 300.0	2	20133076109A	05/14/2020 19:01	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20133076109A	05/14/2020 19:01	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20140304501B	05/19/2020 20:10	Bethany Sandone	100
01333	Sulfide	EPA 376.1	1	20136133301A	05/15/2020 06:33	Nicole Munsell	1

Sample Description: **BOP-76i-0520 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 10:06

The Boeing Company
ELLE Sample #: WW 1313120
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**30.9**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201331404404	05/14/2020 16:28	Cindy M Gehman	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	201331404404	05/14/2020 02:53	James L Mertz	1

Sample Description: **BOP-76i-0520 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 10:06

The Boeing Company
ELLE Sample #: WW 1313121
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**27.6**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201351486602	05/17/2020 16:20	Elaine F Stoltzfus	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	201351486602	05/14/2020 10:40	Annamaria Kuhns	1

Sample Description: **BOP-77i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 11:39

The Boeing Company
ELLE Sample #: WW 1313122
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**51**		5.0	1
11996	**Benzene**	71-43-2	**0.8**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**21**		5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	**Chloroethane**	75-00-3	**0.7**		0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**17**		0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**1.2**		0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**100**	**E**	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.4**		0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**9.2**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
Trial ID: DL						
11996	**Acetone**	67-64-1	**51**		50	10
11996	Benzene	71-43-2	2.0	U	2.0	10
11996	Bromodichloromethane	75-27-4	5.0	U	5.0	10
11996	Bromoform	75-25-2	5.0	U	5.0	10
11996	Bromomethane	74-83-9	5.0	U	5.0	10
11996	2-Butanone	78-93-3	50	U	50	10
11996	Carbon Disulfide	75-15-0	5.0	U	5.0	10
11996	Carbon Tetrachloride	56-23-5	2.0	U	2.0	10

Sample Description: **BOP-77i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 11:39

The Boeing Company
ELLE Sample #: WW 1313122
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Chlorobenzene	108-90-7	5.0 U	5.0	10
11996	Chloroethane	75-00-3	5.0 U	5.0	10
11996	Chloroform	67-66-3	2.0 U	2.0	10
11996	Chloromethane	74-87-3	5.0 U	5.0	10
11996	Dibromochloromethane	124-48-1	5.0 U	5.0	10
11996	1,1-Dichloroethane	75-34-3	5.0 U	5.0	10
11996	1,2-Dichloroethane	107-06-2	2.0 U	2.0	10
11996	1,1-Dichloroethene	75-35-4	2.0 U	2.0	10
11996	**cis-1,2-Dichloroethene**	156-59-2	**16**	2.0	10
11996	trans-1,2-Dichloroethene	156-60-5	2.0 U	2.0	10
11996	1,2-Dichloropropane	78-87-5	5.0 U	5.0	10
11996	cis-1,3-Dichloropropene	10061-01-5	2.0 U	2.0	10
11996	trans-1,3-Dichloropropene	10061-02-6	2.0 U	2.0	10
11996	Ethylbenzene	100-41-4	5.0 U	5.0	10
11996	2-Hexanone	591-78-6	50 U	50	10
11996	4-Methyl-2-pentanone	108-10-1	50 U	50	10
11996	Methylene Chloride	75-09-2	5.0 U	5.0	10
11996	Styrene	100-42-5	5.0 U	5.0	10
11996	1,1,2,2-Tetrachloroethane	79-34-5	2.0 U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0 U	2.0	10
11996	**Toluene**	108-88-3	**100**	2.0	10
11996	112Trichloro122Trifluoroethane	76-13-1	5.0 U	5.0	10
11996	1,1,1-Trichloroethane	71-55-6	5.0 U	5.0	10
11996	1,1,2-Trichloroethane	79-00-5	2.0 U	2.0	10
11996	Trichloroethene	79-01-6	2.0 U	2.0	10
11996	Trichlorofluoromethane	75-69-4	5.0 U	5.0	10
11996	Vinyl Acetate	108-05-4	5.0 U	5.0	10
11996	**Vinyl Chloride**	75-01-4	**8.6**	2.0	10
11996	m+p-Xylene	179601-23-1	5.0 U	5.0	10
11996	o-Xylene	95-47-6	5.0 U	5.0	10
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	
07105	Acetylene	74-86-2	5.0 U	5.0	1
07105	Ethane	74-84-0	5.0 U	5.0	1
07105	**Ethene**	74-85-1	**17**	5.0	1
07105	**Methane**	74-82-8	**11,000 E**	5.0	1
Trial ID: DL					
07105	Acetylene	74-86-2	500 U	500	100
07105	Ethane	74-84-0	500 U	500	100
07105	Ethene	74-85-1	500 U	500	100
07105	**Methane**	74-82-8	**17,000**	500	100
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.50 U	0.50	5
	The sample was reanalyzed at a 1X dilution on 5/14/20 with a result of 0.10 U mg/l.				
00368	Nitrate Nitrogen	14797-55-8	0.10 U	0.10	1

Sample Description: **BOP-77i-0520 Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 11:39

The Boeing Company
ELLE Sample #: WW 1313122
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	
	The sample was reanalyzed at a 1X dilution on 5/14/20 with a result of 0.10 U mg/l.				
00228	Sulfate	14808-79-8	1.0 U	1.0	1
	SM 5310 C-2011		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**282**	100	100
	EPA 376.1		**mg/l**	**mg/l**	
01333	Sulfide	18496-25-8	2.0 U	2.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201401AA	05/19/2020 12:58	Jennifer K Howe	1
11996	8260C Boeing 38	SW-846 8260C 25mL purge	2-DL	H201401AA	05/19/2020 19:29	Jennifer K Howe	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201401AA	05/19/2020 12:57	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H201401AA	05/19/2020 19:28	Jennifer K Howe	10
07105	AMEE by RSK-175	RSKSOP-175 modified	1	201340004A	05/13/2020 14:27	Esther Kathryn Lane	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	201340004A	05/15/2020 02:34	Esther Kathryn Lane	100
00368	Nitrate Nitrogen	EPA 300.0	1	20133076109A	05/12/2020 20:04	Clinton M Wilson	5
00368	Nitrate Nitrogen	EPA 300.0	2	20133076109A	05/14/2020 17:55	Niyati Desai	1
00228	Sulfate	EPA 300.0	1	20133076109A	05/14/2020 17:55	Niyati Desai	1
00273	Total Organic Carbon	SM 5310 C-2011	1	20140304501B	05/20/2020 12:46	Bethany Sandone	100
01333	Sulfide	EPA 376.1	1	20136133301A	05/15/2020 06:33	Nicole Munsell	1

Sample Description: **BOP-77i-0520 Total Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 11:39

The Boeing Company
ELLE Sample #: WW 1313123
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**24.4**	0.200	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201331404404	05/14/2020 16:31	Cindy M Gehman	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	201331404404	05/14/2020 02:53	James L Mertz	1

Sample Description: **BOP-77i-0520 Dissolved Metals Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020 11:39

The Boeing Company
ELLE Sample #: WW 1313124
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010C**		**mg/l**	**mg/l**	
01754	**Iron**	7439-89-6	**24.8**	0.206	1

Sample Comments

This sample was field filtered for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010C	1	201351486602	05/17/2020 16:23	Elaine F Stoltzfus	1
14866	ICP filtered no-digest SW-846	SW-846 3005A	1	201351486602	05/14/2020 10:40	Annamaria Kuhns	1

Sample Description: **Trip Blanks Water**
Boeing Portland 0025116.120.412

Project Name: **Boeing of Portland/0025116.120.412**

Submittal Date/Time: 05/12/2020 10:26
Collection Date/Time: 05/11/2020

The Boeing Company
ELLE Sample #: WW 1313125
ELLE Group #: 2099202
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C 25mL purge	1	H201401AA	05/19/2020 11:54	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H201401AA	05/19/2020 11:53	Jennifer K Howe	1

Quality Control Summary

Client Name: The Boeing Company Group Number: 2099202
Reported: 05/21/2020 10:53

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 was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: H201391AA	Sample number(s): 1313106-1313107,1313110,1313113,1313116		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/21/2020 10:53

Group Number: 2099202

Method Blank (continued)

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: H201401AA	Sample number(s): 1313119,1313122,1313125		
Acetone	5.0	U	5.0
Benzene	0.2	U	0.2
Bromodichloromethane	0.5	U	0.5
Bromoform	0.5	U	0.5
Bromomethane	0.5	U	0.5
2-Butanone	5.0	U	5.0
Carbon Disulfide	0.5	U	0.5
Carbon Tetrachloride	0.2	U	0.2
Chlorobenzene	0.5	U	0.5
Chloroethane	0.5	U	0.5
Chloroform	0.2	U	0.2
Chloromethane	0.5	U	0.5
Dibromochloromethane	0.5	U	0.5
1,1-Dichloroethane	0.5	U	0.5
1,2-Dichloroethane	0.2	U	0.2
1,1-Dichloroethene	0.2	U	0.2
cis-1,2-Dichloroethene	0.2	U	0.2
trans-1,2-Dichloroethene	0.2	U	0.2
1,2-Dichloropropane	0.5	U	0.5
cis-1,3-Dichloropropene	0.2	U	0.2
trans-1,3-Dichloropropene	0.2	U	0.2
Ethylbenzene	0.5	U	0.5
2-Hexanone	5.0	U	5.0
4-Methyl-2-pentanone	5.0	U	5.0
Methylene Chloride	0.5	U	0.5
Styrene	0.5	U	0.5
1,1,2,2-Tetrachloroethane	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Toluene	0.2	U	0.2
112Trichloro122Trifluoroethane	0.5	U	0.5
1,1,1-Trichloroethane	0.5	U	0.5
1,1,2-Trichloroethane	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Trichlorofluoromethane	0.5	U	0.5
Vinyl Acetate	0.5	U	0.5
Vinyl Chloride	0.2	U	0.2
m+p-Xylene	0.5	U	0.5
o-Xylene	0.5	U	0.5
Batch number: 201340003A	Sample number(s): 1313106-1313107,1313110,1313113,1313116,1313119		
Acetylene	5.0	U	5.0
Ethane	5.0	U	5.0
Ethene	5.0	U	5.0
Methane	5.0	U	5.0

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/21/2020 10:53

Group Number: 2099202

Method Blank (continued)

Analysis Name	Result	LOQ
	ug/l	ug/l
Batch number: 201340004A	Sample number(s): 1313122	
Acetylene	5.0 U	5.0
Ethane	5.0 U	5.0
Ethene	5.0 U	5.0
Methane	5.0 U	5.0
	mg/l	mg/l
Batch number: 201331404404	Sample number(s): 1313108,1313111,1313114,1313117,1313120,1313123	
Iron	0.200 U	0.200
Batch number: 201351486602	Sample number(s): 1313109,1313112,1313115,1313118,1313121,1313124	
Iron	0.206 U	0.206
Batch number: 20133076109A	Sample number(s): 1313107,1313116,1313119,1313122	
Nitrate Nitrogen	0.10 U	0.10
Sulfate	1.0 U	1.0
Batch number: 20133076109B	Sample number(s): 1313110,1313113	
Nitrate Nitrogen	0.10 U	0.10
Sulfate	1.0 U	1.0
Batch number: 20135076109A	Sample number(s): 1313106	
Sulfate	1.0 U	1.0
Batch number: 20140304501B	Sample number(s): 1313106-1313107,1313110,1313113,1313116,1313119,1313122	
Total Organic Carbon	1.0 U	1.0
Batch number: 20135133301A	Sample number(s): 1313107	
Sulfide	2.0 U	2.0
Batch number: 20136133301A	Sample number(s): 1313110,1313113,1313116,1313119,1313122	
Sulfide	2.0 U	2.0

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: H201391AA	Sample number(s): 1313106-1313107,1313110,1313113,1313116								
Acetone	37.5	36.5	37.5	36.54	97	97	60-146	0	30
Benzene	5.00	5.46	5.00	5.40	109	108	80-120	1	30
Bromodichloromethane	5.00	5.37	5.00	5.31	107	106	73-124	1	30
Bromoform	5.00	5.20	5.00	5.04	104	101	49-144	3	30
Bromomethane	5.00	5.53	5.00	5.42	111	108	60-136	2	30
2-Butanone	37.5	40.08	37.5	42.46	107	113	59-141	6	30
Carbon Disulfide	5.00	5.45	5.00	5.39	109	108	67-130	1	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/21/2020 10:53

Group Number: 2099202

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Carbon Tetrachloride	5.00	5.34	5.00	5.23	107	105	64-141	2	30
Chlorobenzene	5.00	5.33	5.00	5.23	107	105	80-120	2	30
Chloroethane	5.00	5.67	5.00	5.64	113	113	63-120	0	30
Chloroform	5.00	5.40	5.00	5.41	108	108	80-120	0	30
Chloromethane	5.00	5.89	5.00	5.75	118	115	56-124	2	30
Dibromochloromethane	5.00	5.37	5.00	5.27	107	105	64-138	2	30
1,1-Dichloroethane	5.00	5.54	5.00	5.50	111	110	74-120	1	30
1,2-Dichloroethane	5.00	5.17	5.00	5.29	103	106	69-122	2	30
1,1-Dichloroethene	5.00	5.26	5.00	5.20	105	104	80-131	1	30
cis-1,2-Dichloroethene	5.00	5.54	5.00	5.51	111	110	80-122	1	30
trans-1,2-Dichloroethene	5.00	5.33	5.00	5.21	107	104	80-122	2	30
1,2-Dichloropropane	5.00	5.68	5.00	5.66	114	113	80-120	0	30
cis-1,3-Dichloropropene	5.00	4.96	5.00	5.00	99	100	67-121	1	30
trans-1,3-Dichloropropene	5.00	4.81	5.00	4.94	96	99	61-129	3	30
Ethylbenzene	5.00	5.23	5.00	5.17	105	103	80-120	1	30
2-Hexanone	25	31.16	25	30.98	125	124	52-140	1	30
4-Methyl-2-pentanone	25	29.32	25	28.57	117	114	55-140	3	30
Methylene Chloride	5.00	5.37	5.00	5.39	107	108	80-120	0	30
Styrene	5.00	5.10	5.00	5.18	102	104	80-120	2	30
1,1,2,2-Tetrachloroethane	5.00	5.49	5.00	5.53	110	111	75-123	1	30
Tetrachloroethene	5.00	5.26	5.00	5.22	105	104	80-120	1	30
Toluene	5.00	5.36	5.00	5.28	107	106	80-120	2	30
112Trichloro122Trifluoroethane	5.00	5.02	5.00	4.95	100	99	75-133	1	30
1,1,1-Trichloroethane	5.00	5.14	5.00	5.10	103	102	78-126	1	30
1,1,2-Trichloroethane	5.00	5.59	5.00	5.49	112	110	80-120	2	30
Trichloroethene	5.00	5.25	5.00	5.29	105	106	80-120	1	30
Trichlorofluoromethane	5.00	6.06	5.00	5.88	121	118	62-136	3	30
Vinyl Acetate	12.5	10.29	12.5	10.25	82	82	38-145	0	30
Vinyl Chloride	5.00	5.76	5.00	5.68	115	114	60-125	1	30
m+p-Xylene	10	10.65	10	10.54	107	105	80-120	1	30
o-Xylene	5.00	5.06	5.00	5.06	101	101	80-120	0	30
Batch number: H201401AA	Sample number(s): 1313119,1313122,1313125								
Acetone	37.5	33.45	37.5	33.34	89	89	60-146	0	30
Benzene	5.00	5.21	5.00	5.11	104	102	80-120	2	30
Bromodichloromethane	5.00	5.07	5.00	5.01	101	100	73-124	1	30
Bromoform	5.00	4.60	5.00	4.43	92	89	49-144	4	30
Bromomethane	5.00	5.29	5.00	5.19	106	104	60-136	2	30
2-Butanone	37.5	36.9	37.5	36.24	98	97	59-141	2	30
Carbon Disulfide	5.00	5.13	5.00	4.96	103	99	67-130	3	30
Carbon Tetrachloride	5.00	5.08	5.00	4.95	102	99	64-141	2	30
Chlorobenzene	5.00	5.07	5.00	5.02	101	100	80-120	1	30
Chloroethane	5.00	5.54	5.00	5.33	111	107	63-120	4	30
Chloroform	5.00	5.18	5.00	5.17	104	103	80-120	0	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/21/2020 10:53

Group Number: 2099202

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Chloromethane	5.00	5.36	5.00	5.19	107	104	56-124	3	30
Dibromochloromethane	5.00	5.04	5.00	4.87	101	97	64-138	3	30
1,1-Dichloroethane	5.00	5.31	5.00	5.19	106	104	74-120	2	30
1,2-Dichloroethane	5.00	4.98	5.00	4.92	100	98	69-122	1	30
1,1-Dichloroethene	5.00	4.97	5.00	4.95	99	99	80-131	0	30
cis-1,2-Dichloroethene	5.00	5.34	5.00	5.24	107	105	80-122	2	30
trans-1,2-Dichloroethene	5.00	4.99	5.00	4.90	100	98	80-122	2	30
1,2-Dichloropropane	5.00	5.40	5.00	5.37	108	107	80-120	1	30
cis-1,3-Dichloropropene	5.00	4.88	5.00	4.76	98	95	67-121	3	30
trans-1,3-Dichloropropene	5.00	4.71	5.00	4.59	94	92	61-129	3	30
Ethylbenzene	5.00	4.98	5.00	4.88	100	98	80-120	2	30
2-Hexanone	25	25.13	25	24.81	101	99	52-140	1	30
4-Methyl-2-pentanone	25	25.4	25	23.95	102	96	55-140	6	30
Methylene Chloride	5.00	5.18	5.00	5.10	104	102	80-120	1	30
Styrene	5.00	5.04	5.00	4.95	101	99	80-120	2	30
1,1,2,2-Tetrachloroethane	5.00	5.47	5.00	5.30	109	106	75-123	3	30
Tetrachloroethene	5.00	4.91	5.00	4.91	98	98	80-120	0	30
Toluene	5.00	5.10	5.00	5.02	102	100	80-120	2	30
112Trichloro122Trifluoroethane	5.00	4.78	5.00	4.77	96	95	75-133	0	30
1,1,1-Trichloroethane	5.00	4.96	5.00	4.83	99	97	78-126	3	30
1,1,2-Trichloroethane	5.00	5.32	5.00	5.15	106	103	80-120	3	30
Trichloroethene	5.00	5.02	5.00	5.02	100	100	80-120	0	30
Trichlorofluoromethane	5.00	5.71	5.00	5.61	114	112	62-136	2	30
Vinyl Acetate	12.5	10.67	12.5	10.36	85	83	38-145	3	30
Vinyl Chloride	5.00	5.40	5.00	5.29	108	106	60-125	2	30
m+p-Xylene	10	10.05	10	10.05	101	100	80-120	0	30
o-Xylene	5.00	4.92	5.00	4.86	98	97	80-120	1	30
	ug/l	**ug/l**	**ug/l**	**ug/l**					
Batch number: 201340003A	Sample number(s): 1313106-1313107,1313110,1313113,1313116,1313119								
Acetylene	51.25	54.66	51.25	54.42	107	106	57-146	0	20
Ethane	59.39	58.68	59.39	59.15	99	100	85-115	1	20
Ethene	60.4	59.54	60.4	60.15	99	100	83-115	1	20
Methane	59.42	62.85	59.42	63.71	106	107	85-115	1	20
Batch number: 201340004A	Sample number(s): 1313122								
Acetylene	51.25	53.63			105		57-146		
Ethane	59.39	60.35			102		85-115		
Ethene	60.4	61.39			102		83-115		
Methane	59.42	64.13			108		85-115		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 201331404404	Sample number(s): 1313108,1313111,1313114,1313117,1313120,1313123								
Iron	0.400	0.392			98		80-120		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/21/2020 10:53

Group Number: 2099202

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/l	LCS Conc mg/l	LCSD Spike Added mg/l	LCSD Conc mg/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 201351486602	Sample number(s): 1313109,1313112,1313115,1313118,1313121,1313124								
Iron	0.400	0.416			104		80-120		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20133076109A	Sample number(s): 1313107,1313116,1313119,1313122								
Nitrate Nitrogen	0.750	0.688			92		90-110		
Sulfate	7.50	7.38			98		90-110		
Batch number: 20133076109B	Sample number(s): 1313110,1313113								
Nitrate Nitrogen	0.750	0.688			92		90-110		
Sulfate	7.50	7.38			98		90-110		
Batch number: 20135076109A	Sample number(s): 1313106								
Sulfate	7.50	7.83			104		90-110		
Batch number: 20140304501B	Sample number(s): 1313106-1313107,1313110,1313113,1313116,1313119,1313122								
Total Organic Carbon	25	23.71			95		91-113		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 20135133301A	Sample number(s): 1313107								
Sulfide	20	19.52	20	19.52	98	98	80-120	0	5
Batch number: 20136133301A	Sample number(s): 1313110,1313113,1313116,1313119,1313122								
Sulfide	20	19.32	20	19.32	97	97	80-120	0	5

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 20133076109B	Sample number(s): 1313110,1313113 UNSPK: 1313110									
Nitrate Nitrogen	0.50 U	2.50	2.85			114*		90-110		
Sulfate	0.451	5.00	5.36			98		90-110		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/21/2020 10:53

Group Number: 2099202

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	mg/l	mg/l		
Batch number: 20133076109B	Sample number(s): 1313110,1313113 BKG: 1313110			
Nitrate Nitrogen	0.50 U	0.50 U	0 (1)	15
Sulfate	0.451	0.444	2 (1)	15
	mg/l	mg/l		
Batch number: 20135133301A	Sample number(s): 1313107 BKG: 1313107			
Sulfide	2.0 U	2.0 U	0 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: H201391AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1313106	101	105	99	96
1313106DL	103	103	99	95
1313107	102	101	100	95
1313110	102	100	100	94
1313110DL	102	101	100	96
1313113	102	99	100	98
1313116	103	107	99	96
Blank	104	106	100	93
LCS	101	103	101	98
LCSD	99	104	101	97
Limits:	80-120	80-120	80-120	80-120

Analysis Name: 8260C Boeing 38
Batch number: H201401AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1313119	103	105	98	95
1313122	103	101	98	96
1313122DL	105	106	99	92
1313125	104	105	97	93
Blank	103	101	98	93
LCS	100	102	101	98
LCSD	100	100	100	97

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/21/2020 10:53

Group Number: 2099202

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C Boeing 38
Batch number: H201401AA

Limits:	80-120	80-120	80-120	80-120

Analysis Name: AMEE by RSK-175
Batch number: 201340003A

	Propene
1313106	66
1313106DL	92
1313107	64
1313107DL	93
1313110	79
1313110DL	89
1313113	81
1313113DL	95
1313116	69
1313116DL	92
1313119	67
1313119DL	86
Blank	101
LCS	100
LCSD	101
Limits:	28-140

Analysis Name: AMEE by RSK-175
Batch number: 201340004A

	Propene
1313122	66
1313122DL	97
Blank	104
LCS	105
Limits:	28-140

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 13419 For Eurofins Lancaster Laboratories Environmental use only Group # 2099202 Sample # 131306-25

Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Gresham Oregon
Site Project: Boeing of Portland
Site Program/#: 0025116.120.412
Boeing PM: Debbie Taege
Consultant Contact: Chris Kimmel
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL/GJN # of Coolers: 1

(4) Analyses Requested

(5) Remarks/Comments

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	VOC (38 list)	TOC	Sulfate	Nitrate	Sulfide	AMEE	Total Iron	Dissolved Iron				
BOP-09i-0520	5/11/20	0853	H_2O	9	X	X	X			X						
BOP-72i-0520		1456		12	X	X	X	X	X	X	X	X				
BOP-73i-0520		1054		12	X	X	X	X	X	X	X	X				
BOP-74i-0520		1246		12	X	X	X	X	X	X	X	X				
BOP-75i-0520		1352		12	X	X	X	X	X	X	X	X				
BOP-76i-0520		1006		12	X	X	X	X	X	X	X	X				
BOP-77i-0520	↓	1139	↓	12	X	X	X	X	X	X	X	X				
Trip Blanks	—	—		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 (7)
[signature]	05/11/20 1125		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time 5/12/2020 1024

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

Temperature upon Receipt: 0.4 °C

Custody Seals Intact?: Yes No

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. MR

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 284211

Group Number(s): 2099202

Client: BOEING

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Date:	05/12/2020
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	2
Samples Chilled:	Yes	Trip Blank Type:	HCl
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Jessenia Colon Martinez

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT131	0.4	DT	Pack/Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

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

Tests 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.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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. 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. 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.

eurofins | Lancaster Laboratories Environmental

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is less than the LOQ
K2	Continuing Calibration Blank is above the QC limit and the sample result is less than the LOQ
K3	Initial Calibration Verification is above the QC limit and the sample result is less than the LOQ
K4	Continuing Calibration Verification is above the QC limit and the sample result is less than the LOQ
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Third Quarter 2020

Technical Memorandum

TO: Evelyn Ives, Project Manager

FROM: Kristi Schultz and Danielle Jorgensen

DATE: October 1, 2020

RE: **Boeing Portland Troutdale Gravel Aquifer (TGA)**
Third Quarter 2020 Groundwater Quality Sampling
Laboratory Data Quality Evaluation

This technical memorandum provides the results of a focused data validation associated with 39 groundwater samples, 4 field duplicates, 10 trip blanks, and 23 vapor samples collected during the third quarter 2020TGA sampling event at Boeing Portland. Samples were analyzed by Eurofins Lancaster Laboratories Environmental (ELLE), located in Lancaster, Pennsylvania, and Eurofins Air Toxics (Air Toxics) located in Folsom, California. This data quality evaluation covers ELLE data packages 410-10164-1, 410-10260-1, 410-10167-2, 410-10433-1, 410-10429-1, 410-10432-1, 410-13139-1, 410-10700-1, 410-10702-1, and 410-10882-1 and Air Toxics data package 2008736 and 2008737. Samples submitted to ELLE were analyzed for volatile organic compounds ([VOCs], US Environmental Protection Agency [EPA] Method SW8260C); conventional inorganic parameters including N-Nitrate, N-Nitrite, and sulfate (EPA Method 300.0); sulfide (EPA Method 376.1); total and dissolved iron (EPA Method 6010C); total phosphorous (EPA Method 365.1); N-Ammonia (Method SM 4500 NH3D-2011); total organic carbon (Method SM 5310 C-2011); oil and grease (EPA Method 1664A); diesel- and motor oil-range petroleum hydrocarbons (Oregon Department of Environmental Quality [ODEQ]-approved Method NWTPH-Dx); and methane, ethane, ethane, and acetylene (MEEA; Modified RSK 175). Samples submitted to Air Toxics were analyzed for VOCs (EPA Method TO-15).

The verification and validation check was conducted with guidance from applicable portions of EPA's *National Functional Guidelines for Organic Data Review* (EPA 2016b) and the *National Functional Guidelines for Inorganic Data Review* (EPA 2016a). Landau Associates, Inc. (LAI) performed an EPA-equivalent Level IIA verification and validation check on each laboratory data package, which included the following:

- Verification that the laboratory data package contained all necessary documentation (including chain-of-custody record (COCs); identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at the laboratory; date and time of sample analysis; explanation of any significant corrective actions taken by the laboratory during the analytical process; and, if applicable, date of extraction, definition of laboratory data qualifiers, all sample-related quality control data, and quality control acceptance criteria).
- Verification that all requested analyses, special cleanups, and special handling methods were performed.
- Evaluation of sample holding times.
- Evaluation of quality control data compared to acceptance criteria, including method blanks, surrogate recoveries, matrix spike results, laboratory duplicate and/or replicate results, and laboratory control sample results.

- Evaluation of overall data quality and completeness of analytical data.

Data validation qualifiers are added to the sample results, as appropriate, based on the verification and validation check. The absence of a data qualifier indicates that the reported result is acceptable without qualification. The data quality evaluation is summarized below. Data qualifiers are summarized in Table 1.

Chain-of-Custody Records

A signed COC record was attached to the data packages. The laboratory received all samples in good condition, with the following exceptions:

- The laboratory noted in the case narrative for several data packages that the sample vial used for the VOC analysis of the trip blank contained headspace. No qualification of the data was necessary.
- The laboratory noted in the case narrative for data package 410-10700-1 that the sample vials used MEEA analyses of sample E-3-0820 contained headspace. All associated reported sample results were qualified as estimated (J, UJ), as indicated in Table 1.
- The laboratory noted in the case narrative for data package 410-10700-1t hat the sample vial used for Trial 2 of the MEEA analysis of sample E-11-0820 contained headspace. All associated reported sample results were qualified as estimated (J, UJ), as indicated in Table 1.
- The laboratory noted in the case narratives for data package 410-10702-1 that the sample containers for sample BOP-72i-0820 were not within specification for some of the general chemistry analyses; the sample preservation was updated accordingly by the laboratory to meet required specifications. No qualification of the data was determined necessary.
- The laboratory noted in the case narrative for data package 410-10702-1 that the sample vials used for the MEEA analysis of samples BOP-81i-0820 contained headspace. All associated reported sample results were qualified as estimated (J, UJ), as indicated in Table 1.

Holding Times

For all analyses and all samples, the time between sample collection, extraction (if applicable), and analysis was determined to be within EPA- and project-specified holding times, with the following, exceptions:

- Per the data package 410-10700-1 case narrative, the following samples were analyzed for nitrate outside the holding time due to a laboratory scheduling error: E-3-0820, E-12-0820, E-15-0820, and E-16-0820.
- Per the data package 410-10700-1 case narrative, sample E-12-0820 was analyzed for nitrite outside the holding time due to a laboratory scheduling error.
- Per the data package 410-10882-1 case narrative, the following samples were analyzed for nitrate outside the holding time due to a laboratory scheduling error: BOP-77i-0820, BOP-73i-0820, and BOP-76i-0820.

Blank Results

Laboratory Method Blanks

At least one method blank was analyzed with each batch of samples for analysis. Target analytes were not detected at concentrations greater than the reporting limits in the associated method blanks. No qualification of the data was necessary.

Field Trip Blanks and Field Equipment Blanks

Twelve trip blanks were submitted to the laboratory for VOC analysis with the sample batch. Target analytes were not detected at concentrations greater than the reporting limits in the remaining trip blanks. No qualification of the data was necessary.

No field equipment blanks were submitted for analysis with these sample batches.

Surrogate Recoveries

Appropriate compounds were used as surrogate spikes for the organics analyses. Recovery values for the surrogate spikes were within the current laboratory-specified control limits for all project samples, with the following exceptions:

- Recovery of the surrogate chlorobenzene associated with the diesel- and motor oil-range petroleum hydrocarbon analysis of sample LAI-4-0820 in data package 410-10429-1 was less than the laboratory-specified control limit. The associated sample results were qualified as estimated (J, UJ), as indicated in Table 1.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) and Laboratory Replicate Results

At least one MS and/or laboratory replicate sample were analyzed with the conventional parameters and/or metals analyses. The recovery values for each required spiking compound and/or the relative percent differences (RPDs) between the laboratory replicate results were within the current project-specified and/or laboratory-specified control limits.

Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD) Results

At least one laboratory control sample and/or laboratory control sample duplicate (LCS/LCSD) was analyzed with each batch of samples for analysis. Recoveries and RPDs for the laboratory control samples and associated duplicates were within the current laboratory-specified control limits.

Blind Field Duplicate Results

As specified in the QAPP, blind field duplicate samples were collected at a rate of one blind field duplicate sample per 20 samples, but not less than one blind field duplicate per sampling round. Four pairs of blind field duplicate water samples (TowerInf-0820/TowerInD-0820, TowerEff-0820/TowerEfD-0820, BOP-W-0820/BOP-10i-0820, and BOP-X-0820/BOP-59i-0820) were submitted for analysis.

A project-specified control limit of 20 percent was used to evaluate the RPDs between the duplicate samples except when the sample results were within five times the reporting limit. In these cases, a project-specified control limit of plus or minus the reporting limit was used. RPDs for the duplicate sample pairs submitted for analysis were within the project-specified control limits.

Total and Dissolved Metals Concentrations

The analytical results for total and dissolved metals were compared for each project sample. A project-specified control limit of 20 percent was used to evaluate the RPDs between the total and dissolved metals results, except when the sample results were within five times the reporting limit. In these cases, a project-specified control limit of plus or minus the reporting limit was used. The RPDs between the total and dissolved metals results were within the project-specified control limits for all project samples. No qualification of the data was necessary.

Quantitation Limits

Project-specified quantitation limits were met for all samples except for instances where dilution was performed due to the presence of high level target species or sample matrix interference.

In those instances when an analysis result exceeded the linear range of the instrument, the laboratory appended an “E” flag to the data and reported a subsequent dilution analysis. For those samples, the “E” flagged result is qualified as “DNR” for Do Not Report, and the dilution analysis result is reported for that specific compound. For all other results, the original analysis results are reported because of the lower reporting limits, so the corresponding dilution analysis results are qualified as “DNR”.

Audit/Corrective Action Records

No corrective action records were generated for these sample batches.

Completeness and Overall Data Quality

The completeness for this data set is 100 percent, which meets the project-specified goal of 90 percent minimum.

Data precision was evaluated through laboratory control sample duplicates, laboratory duplicates, matrix spike duplicates, and blind field duplicates. Data accuracy was evaluated through laboratory control samples, matrix spikes, and surrogate spikes. No data were rejected.

LANDAU ASSOCIATES, INC.

Kristi Schultz
Data Specialist

Danille Jorgensen
Environmental Data Manager

DRJ/kes
[P:\025\116\FILERM\T\TGA\DATA\DV MEMOS TGA\2020\3Q20\TGA 3Q20 TM.DOCX]

Attachments

Table 1. Summary of Data Qualifiers

References

EPA. 2016a. National Functional Guidelines for Inorganic Superfund Methods Data Review. edited by Office of Superfund Remediation and Technology Innovation (OSRTI). Washington, DC: US Environmental Protection Agency.

EPA. 2016b. National Functional Guidelines for Superfund Organic Methods Data Review. edited by Office of Superfund Remediation and Technology Innovation (OSRTI). Washington, DC: US Environmental Protection Agency.

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Analyte	Result	Lab Qualifier	Data Qualifier	Sample Number	Reason
410-10429-1	DRO C12-C24 w/Si Gel	1.1		J	LAI-4-0820	Low surrogate recovery
410-10429-1	Diesel/#2 Fuel w/Si Gel	1.4		J	LAI-4-0820	Low surrogate recovery
410-10429-1	Motor Oil w/Si Gel	2.83		J	LAI-4-0820	Low surrogate recovery
410-10700-1	Methane	16500		J	E-3-0820	Headspace
410-10700-1	Ethane	5.0	U	UJ	E-3-0820	Headspace
410-10700-1	Ethene	5.0	U	UJ	E-3-0820	Headspace
410-10700-1	Acetylene	5.0	U	UJ	E-3-0820	Headspace
410-10700-1	Methane	8800		J	E-11-0820	Headspace
410-10700-1	Ethane	5.0	U	UJ	E-11-0820	Headspace
410-10700-1	Ethene	5.0	U	UJ	E-11-0820	Headspace
410-10700-1	Acetylene	5.0	U	UJ	E-11-0820	Headspace
410-10700-1	Nitrogen, Nitrate (as N)	0.1	UH	UJ	E-11-0820	Holding Time
410-10700-1	Nitrogen, Nitrate (as N)	0.5	UH	UJ	E-12-0820	Holding Time
410-10700-1	Nitrogen, Nitrite	0.5	UH	UJ	E-12-0820	Holding Time
410-10700-1	Nitrogen, Nitrate (as N)	0.5	UH	UJ	E-15-0820	Holding Time
410-10700-1	Nitrogen, Nitrate (as N)	0.5	UH	UJ	E-16-0820	Holding Time
410-10700-1	Nitrogen, Nitrate (as N)	0.1	UH	UJ	E-2-0820	Holding Time
410-10700-1	Nitrogen, Nitrate (as N)	0.5	UH	UJ	E-3-0820	Holding Time
410-10700-1	Nitrogen, Nitrate (as N)	0.24	H	J	E-4-0820	Holding Time
410-10702-1	Methane	18200		J	E-3-0820	Headspace
410-10702-1	Ethane	5.0	U	UJ	E-3-0820	Headspace
410-10702-1	Ethene	5.0	U	UJ	E-3-0820	Headspace
410-10702-1	Acetylene	5.0	U	UJ	E-3-0820	Headspace
410-10882-1	Nitrogen, Nitrate (as N)	0.5	UH	UJ	BOP-73I-0820	Holding Time
410-10882-1	Nitrogen, Nitrate (as N)	12.3	H	J	BOP-76I-0820	Holding Time
410-10882-1	Nitrogen, Nitrate (as N)	90.3	H	J	BOP-77I-0820	Holding Time

E = concentration exceeds the calibration range
U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
DNR = do not report

eurofins | Environment Testing America



ANALYTICAL REPORT

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

Laboratory Job ID: 410-10164-1
Client Project/Site: Boeing of Portland/0025116.120.412
Revision: 1

For:
Landau & Associates, Inc.
Sound View Plaza, 130 2nd Ave S
Edmonds, Washington 98020-9129

Attn: Chris Kimmel

Authorized for release by:
9/3/2020 2:17:18 PM

Kay Hower, Principal Project Manager
(717)556-7364
kayhower@eurofinsus.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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 recoveries that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result.
* 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 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. 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 LANACASTER 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. 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.



Kay Hower
Principal Project Manager
9/3/2020 2:17:18 PM

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Detection Summary 6
Client Sample Results 7
Surrogate Summary 9
QC Sample Results 10
QC Association Summary 14
Lab Chronicle 15
Certification Summary 16
Method Summary 17
Sample Summary 18
Chain of Custody 19
Receipt Checklists 20

Definitions/Glossary

Client: Landau & Associates, Inc. Job ID: 410-10164-1
Project/Site: Boeing of Portland/0025116.120.412

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

Case Narrative

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10164-1

Job ID: 410-10164-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-10164-1

Revision
The report being provided is a revision of the original report sent on 8/18/2020. The report (revision 1) is being revised due to: Client requested no MDL's for this project..

Receipt
The samples were received on 8/8/2020 10:19 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.6° C.

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

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

Detection Summary

Client: Landau & Associates, Inc.
Job ID: 410-10164-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: LS-2-0820
Lab Sample ID: 410-10164-1

No Detections.

Client Sample ID: Trip Blank
Lab Sample ID: 410-10164-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client: Landau & Associates, Inc.
Job ID: 410-10164-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: LS-2-0820
Lab Sample ID: 410-10164-1
Date Collected: 08/07/20 15:00
Matrix: Water
Date Received: 08/08/20 10:19

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			08/16/20 13:44	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 13:44	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 13:44	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 13:44	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 13:44	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 13:44	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 13:44	1
2-Butanone	5.00	U	5.00		ug/L			08/16/20 13:44	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 13:44	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 13:44	1
Acetone	5.00	U	5.00		ug/L			08/16/20 13:44	1
Benzene	0.200	U	0.200		ug/L			08/16/20 13:44	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 13:44	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 13:44	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 13:44	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 13:44	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 13:44	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 13:44	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 13:44	1
Chloroform	0.200	U	0.200		ug/L			08/16/20 13:44	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 13:44	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 13:44	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 13:44	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 13:44	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 13:44	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 13:44	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 13:44	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 13:44	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 13:44	1
Styrene	0.500	U	0.500		ug/L			08/16/20 13:44	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/16/20 13:44	1
Toluene	0.200	U	0.200		ug/L			08/16/20 13:44	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 13:44	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 13:44	1
Trichloroethene	0.200	U	0.200		ug/L			08/16/20 13:44	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 13:44	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 13:44	1
Vinyl chloride	0.200	U	0.200		ug/L			08/16/20 13:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*08/16/20 13:44*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*08/16/20 13:44*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*08/16/20 13:44*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*08/16/20 13:44*	*1*

Client: Landau & Associates, Inc.
Job ID: 410-10164-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: Trip Blank
Lab Sample ID: 410-10164-2

Date Collected: 08/07/20 00:00
Matrix: Water
Date Received: 08/08/20 10:19

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			08/16/20 12:15	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 12:15	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 12:15	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 12:15	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 12:15	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 12:15	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 12:15	1
2-Butanone	5.00	U	5.00		ug/L			08/16/20 12:15	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 12:15	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 12:15	1
Acetone	5.00	U	5.00		ug/L			08/16/20 12:15	1
Benzene	0.200	U	0.200		ug/L			08/16/20 12:15	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 12:15	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 12:15	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 12:15	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 12:15	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 12:15	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 12:15	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 12:15	1
Chloroform	0.200	U	0.200		ug/L			08/16/20 12:15	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 12:15	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 12:15	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 12:15	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 12:15	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 12:15	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 12:15	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 12:15	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 12:15	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 12:15	1
Styrene	0.500	U	0.500		ug/L			08/16/20 12:15	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/16/20 12:15	1
Toluene	0.200	U	0.200		ug/L			08/16/20 12:15	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 12:15	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 12:15	1
Trichloroethene	0.200	U	0.200		ug/L			08/16/20 12:15	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 12:15	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 12:15	1
Vinyl chloride	0.200	U	0.200		ug/L			08/16/20 12:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/16/20 12:15*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*08/16/20 12:15*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*08/16/20 12:15*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*08/16/20 12:15*	*1*

Surrogate Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10164-1

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)
410-10164-1	LS-2-0820	99	96	99	96
410-10164-2	Trip Blank	102	97	98	96
LCS 410-33646/5	Lab Control Sample	99	97	99	96
LCS 410-33646/7	Lab Control Sample	101	98	100	98
LCSD 410-33646/6	Lab Control Sample Dup	101	98	100	98
LCSD 410-33646/8	Lab Control Sample Dup	102	98	100	97
MB 410-33646/10	Method Blank	99	98	99	97

Surrogate Legend

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

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10164-1

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

Lab Sample ID: MB 410-33646/10
Matrix: Water
Analysis Batch: 33646

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	0.50	U	0.50	0.060	ug/L			08/16/20 11:25	1
1,1,2,2-Tetrachloroethane	0.20	U	0.20	0.070	ug/L			08/16/20 11:25	1
1,1,2-Trichloroethane	0.20	U	0.20	0.060	ug/L			08/16/20 11:25	1
1,1-Dichloroethane	0.50	U	0.50	0.070	ug/L			08/16/20 11:25	1
1,1-Dichloroethene	0.20	U	0.20	0.060	ug/L			08/16/20 11:25	1
1,2-Dichloroethane	0.20	U	0.20	0.050	ug/L			08/16/20 11:25	1
1,2-Dichloropropane	0.50	U	0.50	0.060	ug/L			08/16/20 11:25	1
2-Butanone	5.0	U	5.0	0.60	ug/L			08/16/20 11:25	1
2-Hexanone	5.0	U	5.0	0.60	ug/L			08/16/20 11:25	1
4-Methyl-2-pentanone	5.0	U	5.0	0.70	ug/L			08/16/20 11:25	1
Acetone	5.0	U	5.0	0.90	ug/L			08/16/20 11:25	1
Benzene	0.20	U	0.20	0.050	ug/L			08/16/20 11:25	1
Bromodichloromethane	0.50	U	0.50	0.050	ug/L			08/16/20 11:25	1
Bromoform	1.0	U	1.0	0.30	ug/L			08/16/20 11:25	1
Bromomethane	0.50	U	0.50	0.070	ug/L			08/16/20 11:25	1
Carbon disulfide	0.50	U	0.50	0.060	ug/L			08/16/20 11:25	1
Carbon tetrachloride	0.20	U	0.20	0.070	ug/L			08/16/20 11:25	1
Chlorobenzene	0.50	U	0.50	0.060	ug/L			08/16/20 11:25	1
Chloroethane	0.50	U	0.50	0.070	ug/L			08/16/20 11:25	1
Chloroform	0.20	U	0.20	0.090	ug/L			08/16/20 11:25	1
Chloromethane	0.50	U	0.50	0.060	ug/L			08/16/20 11:25	1
cis-1,2-Dichloroethene	0.20	U	0.20	0.050	ug/L			08/16/20 11:25	1
cis-1,3-Dichloropropene	0.20	U	0.20	0.050	ug/L			08/16/20 11:25	1
Dibromochloromethane	0.50	U	0.50	0.070	ug/L			08/16/20 11:25	1
Ethylbenzene	0.50	U	0.50	0.060	ug/L			08/16/20 11:25	1
Freon 113	0.50	U	0.50	0.060	ug/L			08/16/20 11:25	1
m&p-Xylene	0.50	U	0.50	0.10	ug/L			08/16/20 11:25	1
Methylene Chloride	0.50	U	0.50	0.070	ug/L			08/16/20 11:25	1
o-Xylene	0.50	U	0.50	0.050	ug/L			08/16/20 11:25	1
Styrene	0.50	U	0.50	0.050	ug/L			08/16/20 11:25	1
Tetrachloroethene	0.20	U	0.20	0.060	ug/L			08/16/20 11:25	1
Toluene	0.20	U	0.20	0.070	ug/L			08/16/20 11:25	1
trans-1,2-Dichloroethene	0.20	U	0.20	0.060	ug/L			08/16/20 11:25	1
trans-1,3-Dichloropropene	0.20	U	0.20	0.060	ug/L			08/16/20 11:25	1
Trichloroethene	0.20	U	0.20	0.060	ug/L			08/16/20 11:25	1
Trichlorofluoromethane	0.50	U	0.50	0.050	ug/L			08/16/20 11:25	1
Vinyl acetate	0.50	U	0.50	0.040	ug/L			08/16/20 11:25	1
Vinyl chloride	0.20	U	0.20	0.10	ug/L			08/16/20 11:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*08/16/20 11:25*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*08/16/20 11:25*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*08/16/20 11:25*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/16/20 11:25*	*1*

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

Lab Sample ID: LCS 410-33646/5
Matrix: Water
Analysis Batch: 33646

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	4.64		ug/L		93	78 - 126
1,1,2,2-Tetrachloroethane	5.00	4.70		ug/L		94	75 - 123
1,1,2-Trichloroethane	5.00	4.89		ug/L		98	80 - 120
1,1-Dichloroethane	5.00	4.97		ug/L		99	74 - 120
1,1-Dichloroethene	5.00	4.99		ug/L		100	80 - 131
1,2-Dichloroethane	5.00	4.64		ug/L		93	69 - 122
1,2-Dichloropropane	5.00	5.21		ug/L		104	80 - 120
2-Butanone	37.5	36.6		ug/L		98	59 - 141
2-Hexanone	25.0	25.4		ug/L		102	52 - 140
4-Methyl-2-pentanone	25.0	24.3		ug/L		97	55 - 140
Acetone	37.5	32.9		ug/L		88	60 - 146
Benzene	5.00	4.94		ug/L		99	80 - 120
Bromodichloromethane	5.00	4.88		ug/L		98	73 - 124
Bromoform	5.00	4.26		ug/L		85	49 - 144
Bromomethane	5.00	4.29		ug/L		86	60 - 136
Carbon disulfide	5.00	5.02		ug/L		100	67 - 130
Carbon tetrachloride	5.00	4.43		ug/L		89	64 - 141
Chlorobenzene	5.00	4.79		ug/L		96	80 - 120
Chloroethane	5.00	4.53		ug/L		91	63 - 120
Chloroform	5.00	4.92		ug/L		98	80 - 120
Chloromethane	5.00	4.17		ug/L		83	56 - 124
cis-1,2-Dichloroethene	5.00	5.38		ug/L		108	80 - 122
cis-1,3-Dichloropropene	5.00	5.04		ug/L		101	67 - 121
Dibromochloromethane	5.00	4.66		ug/L		93	64 - 138
Ethylbenzene	5.00	4.64		ug/L		93	80 - 120
Freon 113	5.00	4.51		ug/L		90	75 - 133
m&p-Xylene	10.0	9.68		ug/L		97	80 - 120
Methylene Chloride	5.00	5.14		ug/L		103	80 - 120
o-Xylene	5.00	4.80		ug/L		96	80 - 120
Styrene	5.00	4.98		ug/L		100	80 - 120
Tetrachloroethene	5.00	4.57		ug/L		91	80 - 120
Toluene	5.00	4.72		ug/L		94	80 - 120
trans-1,2-Dichloroethene	5.00	5.07		ug/L		101	80 - 122
trans-1,3-Dichloropropene	5.00	4.53		ug/L		91	61 - 129
Trichloroethene	5.00	4.97		ug/L		99	80 - 120
Trichlorofluoromethane	5.00	4.61		ug/L		92	62 - 136
Vinyl chloride	5.00	4.27		ug/L		85	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*96*		*80 - 120*

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

Lab Sample ID: LCS 410-33646/7
Matrix: Water
Analysis Batch: 33646

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	12.8		ug/L		102	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: LCSD 410-33646/6
Matrix: Water
Analysis Batch: 33646

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	4.66		ug/L		93	78 - 126	0	30
1,1,2,2-Tetrachloroethane			5.00	4.63		ug/L		93	75 - 123	1	30
1,1,2-Trichloroethane			5.00	4.99		ug/L		100	80 - 120	2	30
1,1-Dichloroethane			5.00	5.04		ug/L		101	74 - 120	1	30
1,1-Dichloroethene			5.00	5.10		ug/L		102	80 - 131	2	30
1,2-Dichloroethane			5.00	4.52		ug/L		90	69 - 122	3	30
1,2-Dichloropropane			5.00	5.32		ug/L		106	80 - 120	2	30
2-Butanone			37.5	37.0		ug/L		99	59 - 141	1	30
2-Hexanone			25.0	25.1		ug/L		101	52 - 140	1	30
4-Methyl-2-pentanone			25.0	24.7		ug/L		99	55 - 140	2	30
Acetone			37.5	33.9		ug/L		90	60 - 146	3	30
Benzene			5.00	5.04		ug/L		101	80 - 120	2	30
Bromodichloromethane			5.00	4.90		ug/L		98	73 - 124	0	30
Bromoform			5.00	4.37		ug/L		87	49 - 144	3	30
Bromomethane			5.00	4.41		ug/L		88	60 - 136	3	30
Carbon disulfide			5.00	5.18		ug/L		104	67 - 130	3	30
Carbon tetrachloride			5.00	4.51		ug/L		90	64 - 141	2	30
Chlorobenzene			5.00	4.85		ug/L		97	80 - 120	1	30
Chloroethane			5.00	4.70		ug/L		94	63 - 120	4	30
Chloroform			5.00	4.98		ug/L		100	80 - 120	1	30
Chloromethane			5.00	4.28		ug/L		86	56 - 124	3	30
cis-1,2-Dichloroethene			5.00	5.37		ug/L		107	80 - 122	0	30
cis-1,3-Dichloropropene			5.00	5.08		ug/L		102	67 - 121	1	30
Dibromochloromethane			5.00	4.73		ug/L		95	64 - 138	1	30
Ethylbenzene			5.00	4.74		ug/L		95	80 - 120	2	30
Freon 113			5.00	4.64		ug/L		93	75 - 133	3	30
m&p-Xylene			10.0	9.87		ug/L		99	80 - 120	2	30
Methylene Chloride			5.00	5.14		ug/L		103	80 - 120	0	30
o-Xylene			5.00	4.96		ug/L		99	80 - 120	3	30
Styrene			5.00	5.04		ug/L		101	80 - 120	1	30
Tetrachloroethene			5.00	4.69		ug/L		94	80 - 120	3	30
Toluene			5.00	4.91		ug/L		98	80 - 120	4	30
trans-1,2-Dichloroethene			5.00	5.17		ug/L		103	80 - 122	2	30
trans-1,3-Dichloropropene			5.00	4.65		ug/L		93	61 - 129	3	30
Trichloroethene			5.00	5.00		ug/L		100	80 - 120	1	30

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

Lab Sample ID: LCSD 410-33646/6
Matrix: Water
Analysis Batch: 33646

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	4.76		ug/L		95	62 - 136	3	30
Vinyl chloride			5.00	4.49		ug/L		90	60 - 125	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: LCSD 410-33646/8
Matrix: Water
Analysis Batch: 33646

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	12.9		ug/L		103	38 - 145	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

QC Association Summary

Client: Landau & Associates, Inc.
Job ID: 410-10164-1
Project/Site: Boeing of Portland/0025116.120.412

GC/MS VOA

Analysis Batch: 33646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10164-1	LS-2-0820	Total/NA	Water	8260C LL	
410-10164-2	Trip Blank	Total/NA	Water	8260C LL	
MB 410-33646/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-33646/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-33646/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-33646/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-33646/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Lab Chronicle

Client: Landau & Associates, Inc.
Job ID: 410-10164-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: LS-2-0820
Lab Sample ID: 410-10164-1

Date Collected: 08/07/20 15:00
Matrix: Water
Date Received: 08/08/20 10:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33646	08/16/20 13:44	R64Z	ELLE

Client Sample ID: Trip Blank
Lab Sample ID: 410-10164-2

Date Collected: 08/07/20 00:00
Matrix: Water
Date Received: 08/08/20 10:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33646	08/16/20 12:15	R64Z	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: 410-10164-1
Project/Site: Boeing of Portland/0025116.120.412

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260C LL		Water	1,1,1-Trichloroethane
8260C LL		Water	1,1,2,2-Tetrachloroethane
8260C LL		Water	1,1,2-Trichloroethane
8260C LL		Water	1,1-Dichloroethane
8260C LL		Water	1,1-Dichloroethene
8260C LL		Water	1,2-Dichloroethane
8260C LL		Water	1,2-Dichloropropane
8260C LL		Water	2-Butanone
8260C LL		Water	2-Hexanone
8260C LL		Water	4-Methyl-2-pentanone
8260C LL		Water	Acetone
8260C LL		Water	Benzene
8260C LL		Water	Bromodichloromethane
8260C LL		Water	Bromoform
8260C LL		Water	Bromomethane
8260C LL		Water	Carbon disulfide
8260C LL		Water	Carbon tetrachloride
8260C LL		Water	Chlorobenzene
8260C LL		Water	Chloroethane
8260C LL		Water	Chloroform
8260C LL		Water	Chloromethane
8260C LL		Water	cis-1,2-Dichloroethene
8260C LL		Water	cis-1,3-Dichloropropene
8260C LL		Water	Dibromochloromethane
8260C LL		Water	Ethylbenzene
8260C LL		Water	Freon 113
8260C LL		Water	m&p-Xylene
8260C LL		Water	Methylene Chloride
8260C LL		Water	o-Xylene
8260C LL		Water	Styrene
8260C LL		Water	Tetrachloroethene
8260C LL		Water	Toluene
8260C LL		Water	trans-1,2-Dichloroethene
8260C LL		Water	trans-1,3-Dichloropropene
8260C LL		Water	Trichloroethene
8260C LL		Water	Trichlorofluoromethane
8260C LL		Water	Vinyl acetate
8260C LL		Water	Vinyl chloride

Method Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10164-1

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: 410-10164-1
Project/Site: Boeing of Portland/0025116.120.412

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-10164-1	LS-2-0820	Water	08/07/20 15:00	08/08/20 10:19	
410-10164-2	Trip Blank	Water	08/07/20 00:00	08/08/20 10:19	

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-10164 Chain of Custody

onmental use only

orrespond.

(1) Client Information

Site Location: Gresham, Oregon
Site Project: Boeing of Portland
Site Program/#: 0025116.120.412
Boeing PM: Debbie Tacye
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: VOC (38 list)	(5) Remarks/Comments
LS-2-0820	8/7/20	1500	H_2O	3	X	
Trip Blanks	—	—	H_2O	1	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. Lyng [illegible]	8/7/20 16:20	[illegible]	[illegible]
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: [illegible]	8/8/20 1019

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

Temperature upon Receipt: 1.1 °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: 410-10164-1

Login Number: 10164

List Source: Eurofins Lancaster Laboratories Env

List Number: 1

Creator: Rivera-Santa, Julissa

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.	N/A	
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.	True	
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	

eurofins | Environment Testing America



ANALYTICAL REPORT

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

Laboratory Job ID: 410-10167-2
Client Project/Site: Boeing Portland/0025116.620.640

For:
Landau & Associates, Inc.
Sound View Plaza, 130 2nd Ave S
Edmonds, Washington 98020-9129

Attn: Chris Kimmel

Authorized for release by:
9/4/2020 3:04:42 PM

Kay Hower, Principal Project Manager
(717)556-7364
kayhower@eurofinsus.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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 recoveries that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result.

* 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 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. 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 LANACASTER 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. 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.



Kay Hower
Principal Project Manager
9/4/2020 3:04:42 PM

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Detection Summary 6
Client Sample Results 8
Surrogate Summary 20
QC Sample Results 21
QC Association Summary 25
Lab Chronicle 26
Certification Summary 28
Method Summary 29
Sample Summary 30
Chain of Custody 31
Receipt Checklists 34

Definitions/Glossary

Client: Landau & Associates, Inc. Job ID: 410-10167-2
Project/Site: Boeing Portland/0025116.620.640

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
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: 410-10167-2

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-10167-2

Receipt
The samples were received on 8/8/2020 10:19 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.6º C.

Receipt Exceptions
The following sample was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC):
E-13-0820 (3) 08/07/20 11:15
E-13-0820 (410-10167-27)

GC/MS VOA
Method 8260C LL: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): Trip Blanks (410-10167-26). The sample container was received with headspace.

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

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

Detection Summary

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

Job ID: 410-10167-2

Client Sample ID: BOP-07d(148)-0820 — Lab Sample ID: 410-10167-17

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	25.0		5.00		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	2.06		0.200		ug/L	1		8260C LL	Total/NA
Toluene	2.73		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	3.77		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: BOP-56i-0820 — Lab Sample ID: 410-10167-18

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	34.1		5.00		ug/L	1		8260C LL	Total/NA
Chloroform	1.40		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	1.28		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	11.9		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	12.0		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: BOP-57ia-0820 — Lab Sample ID: 410-10167-19

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.533		0.200		ug/L	1		8260C LL	Total/NA
Acetone	22.9		5.00		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	3.64		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	0.362		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	7.53		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	1.43		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: BOP-57ib-0820 — Lab Sample ID: 410-10167-20

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	11.6		0.500		ug/L	1		8260C LL	Total/NA
1,1-Dichloroethene	54.9	E	0.200		ug/L	1		8260C LL	Total/NA
Acetone	10.2		5.00		ug/L	1		8260C LL	Total/NA
Chloroform	0.830		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	5.98		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	1.00		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	48.8	E	0.200		ug/L	1		8260C LL	Total/NA
1,1,1-Trichloroethane - DL	10.3		5.00		ug/L	10		8260C LL	Total/NA
1,1-Dichloroethene - DL	45.6		2.00		ug/L	10		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	5.35		2.00		ug/L	10		8260C LL	Total/NA
Trichloroethene - DL	42.6		2.00		ug/L	10		8260C LL	Total/NA

Client Sample ID: BOP-59i-0820 — Lab Sample ID: 410-10167-21

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	36.8		5.00		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	10.3		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	1.02		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	5.14		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: D-07i-0820 — Lab Sample ID: 410-10167-22

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	28.8		5.00		ug/L	1		8260C LL	Total/NA
Chloroform	0.333		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	0.951		0.200		ug/L	1		8260C LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Detection Summary

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

Job ID: 410-10167-2

Client Sample ID: D-08i-0820 — Lab Sample ID: 410-10167-23

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.754		0.200		ug/L	1		8260C LL	Total/NA
Acetone	21.7		5.00		ug/L	1		8260C LL	Total/NA
Chloroform	0.408		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	0.352		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	0.271		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	8.70		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: D-12i-0820 — Lab Sample ID: 410-10167-24

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.648		0.200		ug/L	1		8260C LL	Total/NA
Acetone	23.0		5.00		ug/L	1		8260C LL	Total/NA
Trichloroethene	3.10		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: BOP-x-0820 — Lab Sample ID: 410-10167-25

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	35.3		5.00		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	9.72		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	0.952		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	4.79		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: Trip Blanks — Lab Sample ID: 410-10167-26

No Detections.

Client Sample ID: E-13-0820 — Lab Sample ID: 410-10167-27

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	1.95		0.200		ug/L	1		8260C LL	Total/NA
Chloroform	0.216		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	1.54		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	0.332		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	8.96		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.502		0.200		ug/L	1		8260C LL	Total/NA

This Detection Summary does not include radiochemical test results.

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

Job ID: 410-10167-2

Client Sample ID: BOP-07d(148)-0820

Date Collected: 08/07/20 13:15
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-17

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			08/16/20 19:58	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 19:58	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 19:58	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 19:58	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 19:58	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 19:58	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 19:58	1
2-Butanone	5.00	U	5.00		ug/L			08/16/20 19:58	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 19:58	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 19:58	1
Acetone	**25.0**		5.00		ug/L			08/16/20 19:58	1
Benzene	0.200	U	0.200		ug/L			08/16/20 19:58	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 19:58	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 19:58	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 19:58	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 19:58	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 19:58	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 19:58	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 19:58	1
Chloroform	0.200	U	0.200		ug/L			08/16/20 19:58	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 19:58	1
cis-1,2-Dichloroethene	**2.06**		0.200		ug/L			08/16/20 19:58	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 19:58	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 19:58	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 19:58	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 19:58	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 19:58	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 19:58	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 19:58	1
Styrene	0.500	U	0.500		ug/L			08/16/20 19:58	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/16/20 19:58	1
Toluene	**2.73**		0.200		ug/L			08/16/20 19:58	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 19:58	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 19:58	1
Trichloroethene	0.200	U	0.200		ug/L			08/16/20 19:58	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 19:58	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 19:58	1
Vinyl chloride	**3.77**		0.200		ug/L			08/16/20 19:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/16/20 19:58*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*08/16/20 19:58*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*08/16/20 19:58*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/16/20 19:58*	*1*

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

Job ID: 410-10167-2

Client Sample ID: BOP-56i-0820

Date Collected: 08/07/20 13:20
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-18

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			08/16/20 12:47	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 12:47	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 12:47	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 12:47	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 12:47	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 12:47	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 12:47	1
2-Butanone	5.00	U	5.00		ug/L			08/16/20 12:47	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 12:47	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 12:47	1
Acetone	**34.1**		5.00		ug/L			08/16/20 12:47	1
Benzene	0.200	U	0.200		ug/L			08/16/20 12:47	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 12:47	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 12:47	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 12:47	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 12:47	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 12:47	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 12:47	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 12:47	1
Chloroform	**1.40**		0.200		ug/L			08/16/20 12:47	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 12:47	1
cis-1,2-Dichloroethene	**1.28**		0.200		ug/L			08/16/20 12:47	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 12:47	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 12:47	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 12:47	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 12:47	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 12:47	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 12:47	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 12:47	1
Styrene	0.500	U	0.500		ug/L			08/16/20 12:47	1
Tetrachloroethene	**11.9**		0.200		ug/L			08/16/20 12:47	1
Toluene	0.200	U	0.200		ug/L			08/16/20 12:47	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 12:47	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 12:47	1
Trichloroethene	**12.0**		0.200		ug/L			08/16/20 12:47	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 12:47	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 12:47	1
Vinyl chloride	0.200	U	0.200		ug/L			08/16/20 12:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/16/20 12:47*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 120*		*08/16/20 12:47*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*08/16/20 12:47*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/16/20 12:47*	*1*

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

Job ID: 410-10167-2

Client Sample ID: BOP-57ia-0820

Date Collected: 08/07/20 13:40
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-19

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			08/16/20 13:08	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 13:08	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 13:08	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 13:08	1
1,1-Dichloroethene	**0.533**		0.200		ug/L			08/16/20 13:08	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 13:08	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 13:08	1
2-Butanone	5.00	U	5.00		ug/L			08/16/20 13:08	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 13:08	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 13:08	1
Acetone	**22.9**		5.00		ug/L			08/16/20 13:08	1
Benzene	0.200	U	0.200		ug/L			08/16/20 13:08	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 13:08	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 13:08	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 13:08	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 13:08	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 13:08	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 13:08	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 13:08	1
Chloroform	0.200	U	0.200		ug/L			08/16/20 13:08	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 13:08	1
cis-1,2-Dichloroethene	**3.64**		0.200		ug/L			08/16/20 13:08	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 13:08	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 13:08	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 13:08	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 13:08	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 13:08	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 13:08	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 13:08	1
Styrene	0.500	U	0.500		ug/L			08/16/20 13:08	1
Tetrachloroethene	**0.362**		0.200		ug/L			08/16/20 13:08	1
Toluene	0.200	U	0.200		ug/L			08/16/20 13:08	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 13:08	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 13:08	1
Trichloroethene	**7.53**		0.200		ug/L			08/16/20 13:08	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 13:08	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 13:08	1
Vinyl chloride	**1.43**		0.200		ug/L			08/16/20 13:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/16/20 13:08*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*08/16/20 13:08*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/16/20 13:08*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/16/20 13:08*	*1*

Client Sample ID: BOP-57ib-0820

Date Collected: 08/07/20 14:00
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-20

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	**11.6**		0.500		ug/L			08/16/20 13:30	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 13:30	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 13:30	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 13:30	1
1,1-Dichloroethene	**54.9**	**E**	0.200		ug/L			08/16/20 13:30	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 13:30	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 13:30	1
2-Butanone	5.00	U	5.00		ug/L			08/16/20 13:30	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 13:30	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 13:30	1
Acetone	**10.2**		5.00		ug/L			08/16/20 13:30	1
Benzene	0.200	U	0.200		ug/L			08/16/20 13:30	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 13:30	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 13:30	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 13:30	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 13:30	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 13:30	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 13:30	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 13:30	1
Chloroform	**0.830**		0.200		ug/L			08/16/20 13:30	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 13:30	1
cis-1,2-Dichloroethene	**5.98**		0.200		ug/L			08/16/20 13:30	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 13:30	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 13:30	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 13:30	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 13:30	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 13:30	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 13:30	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 13:30	1
Styrene	0.500	U	0.500		ug/L			08/16/20 13:30	1
Tetrachloroethene	**1.00**		0.200		ug/L			08/16/20 13:30	1
Toluene	0.200	U	0.200		ug/L			08/16/20 13:30	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 13:30	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 13:30	1
Trichloroethene	**48.8**	**E**	0.200		ug/L			08/16/20 13:30	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 13:30	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 13:30	1
Vinyl chloride	0.200	U	0.200		ug/L			08/16/20 13:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*80 - 120*		*08/16/20 13:30*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*08/16/20 13:30*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*08/16/20 13:30*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/16/20 13:30*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**10.3**		5.00		ug/L			08/16/20 13:51	10
1,1,2,2-Tetrachloroethane	2.00	U	2.00		ug/L			08/16/20 13:51	10
1,1,2-Trichloroethane	2.00	U	2.00		ug/L			08/16/20 13:51	10

Client Sample ID: BOP-57ib-0820

Lab Sample ID: 410-10167-20

Date Collected: 08/07/20 14:00

Matrix: Water

Date Received: 08/08/20 10:19

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	5.00	U	5.00		ug/L			08/16/20 13:51	10
1,1-Dichloroethene	**45.6**		2.00		ug/L			08/16/20 13:51	10
1,2-Dichloroethane	2.00	U	2.00		ug/L			08/16/20 13:51	10
1,2-Dichloropropane	5.00	U	5.00		ug/L			08/16/20 13:51	10
2-Butanone	50.0	U	50.0		ug/L			08/16/20 13:51	10
2-Hexanone	50.0	U	50.0		ug/L			08/16/20 13:51	10
4-Methyl-2-pentanone	50.0	U	50.0		ug/L			08/16/20 13:51	10
Acetone	50.0	U	50.0		ug/L			08/16/20 13:51	10
Benzene	2.00	U	2.00		ug/L			08/16/20 13:51	10
Bromodichloromethane	5.00	U	5.00		ug/L			08/16/20 13:51	10
Bromoform	10.0	U	10.0		ug/L			08/16/20 13:51	10
Bromomethane	5.00	U	5.00		ug/L			08/16/20 13:51	10
Carbon disulfide	5.00	U	5.00		ug/L			08/16/20 13:51	10
Carbon tetrachloride	2.00	U	2.00		ug/L			08/16/20 13:51	10
Chlorobenzene	5.00	U	5.00		ug/L			08/16/20 13:51	10
Chloroethane	5.00	U	5.00		ug/L			08/16/20 13:51	10
Chloroform	2.00	U	2.00		ug/L			08/16/20 13:51	10
Chloromethane	5.00	U	5.00		ug/L			08/16/20 13:51	10
cis-1,2-Dichloroethene	**5.35**		2.00		ug/L			08/16/20 13:51	10
cis-1,3-Dichloropropene	2.00	U	2.00		ug/L			08/16/20 13:51	10
Dibromochloromethane	5.00	U	5.00		ug/L			08/16/20 13:51	10
Ethylbenzene	5.00	U	5.00		ug/L			08/16/20 13:51	10
Freon 113	5.00	U	5.00		ug/L			08/16/20 13:51	10
m&p-Xylene	5.00	U	5.00		ug/L			08/16/20 13:51	10
Methylene Chloride	5.00	U	5.00		ug/L			08/16/20 13:51	10
o-Xylene	5.00	U	5.00		ug/L			08/16/20 13:51	10
Styrene	5.00	U	5.00		ug/L			08/16/20 13:51	10
Tetrachloroethene	2.00	U	2.00		ug/L			08/16/20 13:51	10
Toluene	2.00	U	2.00		ug/L			08/16/20 13:51	10
trans-1,2-Dichloroethene	2.00	U	2.00		ug/L			08/16/20 13:51	10
trans-1,3-Dichloropropene	2.00	U	2.00		ug/L			08/16/20 13:51	10
Trichloroethene	**42.6**		2.00		ug/L			08/16/20 13:51	10
Trichlorofluoromethane	5.00	U	5.00		ug/L			08/16/20 13:51	10
Vinyl acetate	5.00	U	5.00		ug/L			08/16/20 13:51	10
Vinyl chloride	2.00	U	2.00		ug/L			08/16/20 13:51	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/16/20 13:51*	*10*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*08/16/20 13:51*	*10*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/16/20 13:51*	*10*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/16/20 13:51*	*10*

Client Sample ID: BOP-59i-0820

Lab Sample ID: 410-10167-21

Date Collected: 08/07/20 13:00

Matrix: Water

Date Received: 08/08/20 10:19

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			08/16/20 14:13	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 14:13	1

Client Sample ID: BOP-59i-0820

Date Collected: 08/07/20 13:00
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-21

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 14:13	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 14:13	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 14:13	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 14:13	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 14:13	1
2-Butanone	5.00	U	5.00		ug/L			08/16/20 14:13	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 14:13	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 14:13	1
Acetone	**36.8**		5.00		ug/L			08/16/20 14:13	1
Benzene	0.200	U	0.200		ug/L			08/16/20 14:13	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 14:13	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 14:13	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 14:13	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 14:13	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 14:13	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 14:13	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 14:13	1
Chloroform	0.200	U	0.200		ug/L			08/16/20 14:13	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 14:13	1
cis-1,2-Dichloroethene	**10.3**		0.200		ug/L			08/16/20 14:13	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 14:13	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 14:13	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 14:13	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 14:13	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 14:13	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 14:13	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 14:13	1
Styrene	0.500	U	0.500		ug/L			08/16/20 14:13	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/16/20 14:13	1
Toluene	0.200	U	0.200		ug/L			08/16/20 14:13	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 14:13	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 14:13	1
Trichloroethene	**1.02**		0.200		ug/L			08/16/20 14:13	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 14:13	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 14:13	1
Vinyl chloride	**5.14**		0.200		ug/L			08/16/20 14:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/16/20 14:13*	*1*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*08/16/20 14:13*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*08/16/20 14:13*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/16/20 14:13*	*1*

Client Sample ID: D-07i-0820

Date Collected: 08/07/20 10:30
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-22

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			08/16/20 14:57	1

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

Job ID: 410-10167-2

Client Sample ID: D-07i-0820
Date Collected: 08/07/20 10:30
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-22
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 14:57	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 14:57	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 14:57	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 14:57	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 14:57	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 14:57	1
2-Butanone	5.00	U	5.00		ug/L			08/16/20 14:57	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 14:57	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 14:57	1
Acetone	**28.8**		5.00		ug/L			08/16/20 14:57	1
Benzene	0.200	U	0.200		ug/L			08/16/20 14:57	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 14:57	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 14:57	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 14:57	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 14:57	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 14:57	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 14:57	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 14:57	1
Chloroform	**0.333**		0.200		ug/L			08/16/20 14:57	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 14:57	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 14:57	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 14:57	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 14:57	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 14:57	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 14:57	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 14:57	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 14:57	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 14:57	1
Styrene	0.500	U	0.500		ug/L			08/16/20 14:57	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/16/20 14:57	1
Toluene	0.200	U	0.200		ug/L			08/16/20 14:57	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 14:57	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 14:57	1
Trichloroethene	**0.951**		0.200		ug/L			08/16/20 14:57	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 14:57	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 14:57	1
Vinyl chloride	0.200	U	0.200		ug/L			08/16/20 14:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/16/20 14:57*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 120*		*08/16/20 14:57*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*08/16/20 14:57*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/16/20 14:57*	*1*

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

Job ID: 410-10167-2

Client Sample ID: D-08i-0820

Date Collected: 08/07/20 10:45
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-23

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			08/16/20 15:18	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 15:18	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 15:18	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 15:18	1
1,1-Dichloroethene	**0.754**		0.200		ug/L			08/16/20 15:18	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 15:18	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 15:18	1
2-Butanone	5.00	U	5.00		ug/L			08/16/20 15:18	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 15:18	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 15:18	1
Acetone	**21.7**		5.00		ug/L			08/16/20 15:18	1
Benzene	0.200	U	0.200		ug/L			08/16/20 15:18	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 15:18	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 15:18	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 15:18	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 15:18	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 15:18	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 15:18	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 15:18	1
Chloroform	**0.408**		0.200		ug/L			08/16/20 15:18	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 15:18	1
cis-1,2-Dichloroethene	**0.352**		0.200		ug/L			08/16/20 15:18	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 15:18	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 15:18	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 15:18	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 15:18	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 15:18	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 15:18	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 15:18	1
Styrene	0.500	U	0.500		ug/L			08/16/20 15:18	1
Tetrachloroethene	**0.271**		0.200		ug/L			08/16/20 15:18	1
Toluene	0.200	U	0.200		ug/L			08/16/20 15:18	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 15:18	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 15:18	1
Trichloroethene	**8.70**		0.200		ug/L			08/16/20 15:18	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 15:18	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 15:18	1
Vinyl chloride	0.200	U	0.200		ug/L			08/16/20 15:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*08/16/20 15:18*	*1*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*08/16/20 15:18*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*08/16/20 15:18*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*08/16/20 15:18*	*1*

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

Job ID: 410-10167-2

Client Sample ID: D-12i-0820

Date Collected: 08/07/20 11:00
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-24

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			08/16/20 15:40	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 15:40	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 15:40	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 15:40	1
1,1-Dichloroethene	**0.648**		0.200		ug/L			08/16/20 15:40	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 15:40	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 15:40	1
2-Butanone	5.00	U	5.00		ug/L			08/16/20 15:40	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 15:40	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 15:40	1
Acetone	**23.0**		5.00		ug/L			08/16/20 15:40	1
Benzene	0.200	U	0.200		ug/L			08/16/20 15:40	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 15:40	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 15:40	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 15:40	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 15:40	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 15:40	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 15:40	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 15:40	1
Chloroform	0.200	U	0.200		ug/L			08/16/20 15:40	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 15:40	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 15:40	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 15:40	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 15:40	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 15:40	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 15:40	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 15:40	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 15:40	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 15:40	1
Styrene	0.500	U	0.500		ug/L			08/16/20 15:40	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/16/20 15:40	1
Toluene	0.200	U	0.200		ug/L			08/16/20 15:40	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 15:40	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 15:40	1
Trichloroethene	**3.10**		0.200		ug/L			08/16/20 15:40	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 15:40	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 15:40	1
Vinyl chloride	0.200	U	0.200		ug/L			08/16/20 15:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*80 - 120*		*08/16/20 15:40*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 120*		*08/16/20 15:40*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/16/20 15:40*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/16/20 15:40*	*1*

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

Job ID: 410-10167-2

Client Sample ID: BOP-x-0820

Date Collected: 08/07/20 12:00
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-25

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			08/16/20 16:02	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 16:02	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 16:02	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 16:02	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 16:02	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 16:02	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 16:02	1
2-Butanone	5.00	U	5.00		ug/L			08/16/20 16:02	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 16:02	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 16:02	1
Acetone	**35.3**		5.00		ug/L			08/16/20 16:02	1
Benzene	0.200	U	0.200		ug/L			08/16/20 16:02	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 16:02	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 16:02	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 16:02	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 16:02	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 16:02	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 16:02	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 16:02	1
Chloroform	0.200	U	0.200		ug/L			08/16/20 16:02	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 16:02	1
cis-1,2-Dichloroethene	**9.72**		0.200		ug/L			08/16/20 16:02	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 16:02	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 16:02	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 16:02	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 16:02	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 16:02	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 16:02	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 16:02	1
Styrene	0.500	U	0.500		ug/L			08/16/20 16:02	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/16/20 16:02	1
Toluene	0.200	U	0.200		ug/L			08/16/20 16:02	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 16:02	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 16:02	1
Trichloroethene	**0.952**		0.200		ug/L			08/16/20 16:02	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 16:02	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 16:02	1
Vinyl chloride	**4.79**		0.200		ug/L			08/16/20 16:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*08/16/20 16:02*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 120*		*08/16/20 16:02*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*08/16/20 16:02*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/16/20 16:02*	*1*

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

Job ID: 410-10167-2

Client Sample ID: Trip Blanks

Date Collected: 08/07/20 00:00
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-26

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	0.50	U	0.50	0.060	ug/L			08/16/20 12:03	1
1,1,2,2-Tetrachloroethane	0.20	U	0.20	0.070	ug/L			08/16/20 12:03	1
1,1,2-Trichloroethane	0.20	U	0.20	0.060	ug/L			08/16/20 12:03	1
1,1-Dichloroethane	0.50	U	0.50	0.070	ug/L			08/16/20 12:03	1
1,1-Dichloroethene	0.20	U	0.20	0.060	ug/L			08/16/20 12:03	1
1,2-Dichloroethane	0.20	U	0.20	0.050	ug/L			08/16/20 12:03	1
1,2-Dichloropropane	0.50	U	0.50	0.060	ug/L			08/16/20 12:03	1
2-Butanone	5.0	U	5.0	0.60	ug/L			08/16/20 12:03	1
2-Hexanone	5.0	U	5.0	0.60	ug/L			08/16/20 12:03	1
4-Methyl-2-pentanone	5.0	U	5.0	0.70	ug/L			08/16/20 12:03	1
Acetone	5.0	U	5.0	0.90	ug/L			08/16/20 12:03	1
Benzene	0.20	U	0.20	0.050	ug/L			08/16/20 12:03	1
Bromodichloromethane	0.50	U	0.50	0.050	ug/L			08/16/20 12:03	1
Bromoform	1.0	U	1.0	0.30	ug/L			08/16/20 12:03	1
Bromomethane	0.50	U	0.50	0.070	ug/L			08/16/20 12:03	1
Carbon disulfide	0.50	U	0.50	0.060	ug/L			08/16/20 12:03	1
Carbon tetrachloride	0.20	U	0.20	0.070	ug/L			08/16/20 12:03	1
Chlorobenzene	0.50	U	0.50	0.060	ug/L			08/16/20 12:03	1
Chloroethane	0.50	U	0.50	0.070	ug/L			08/16/20 12:03	1
Chloroform	0.20	U	0.20	0.090	ug/L			08/16/20 12:03	1
Chloromethane	0.50	U	0.50	0.060	ug/L			08/16/20 12:03	1
cis-1,2-Dichloroethene	0.20	U	0.20	0.050	ug/L			08/16/20 12:03	1
cis-1,3-Dichloropropene	0.20	U	0.20	0.050	ug/L			08/16/20 12:03	1
Dibromochloromethane	0.50	U	0.50	0.070	ug/L			08/16/20 12:03	1
Ethylbenzene	0.50	U	0.50	0.060	ug/L			08/16/20 12:03	1
Freon 113	0.50	U	0.50	0.060	ug/L			08/16/20 12:03	1
m&p-Xylene	0.50	U	0.50	0.10	ug/L			08/16/20 12:03	1
Methylene Chloride	0.50	U	0.50	0.070	ug/L			08/16/20 12:03	1
o-Xylene	0.50	U	0.50	0.050	ug/L			08/16/20 12:03	1
Styrene	0.50	U	0.50	0.050	ug/L			08/16/20 12:03	1
Tetrachloroethene	0.20	U	0.20	0.060	ug/L			08/16/20 12:03	1
Toluene	0.20	U	0.20	0.070	ug/L			08/16/20 12:03	1
trans-1,2-Dichloroethene	0.20	U	0.20	0.060	ug/L			08/16/20 12:03	1
trans-1,3-Dichloropropene	0.20	U	0.20	0.060	ug/L			08/16/20 12:03	1
Trichloroethene	0.20	U	0.20	0.060	ug/L			08/16/20 12:03	1
Trichlorofluoromethane	0.50	U	0.50	0.050	ug/L			08/16/20 12:03	1
Vinyl acetate	0.50	U	0.50	0.040	ug/L			08/16/20 12:03	1
Vinyl chloride	0.20	U	0.20	0.10	ug/L			08/16/20 12:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/16/20 12:03*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*08/16/20 12:03*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*08/16/20 12:03*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*08/16/20 12:03*	*1*

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

Job ID: 410-10167-2

Client Sample ID: E-13-0820

Date Collected: 08/07/20 11:15
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-27

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			08/16/20 16:24	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 16:24	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 16:24	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 16:24	1
1,1-Dichloroethene	**1.95**		0.200		ug/L			08/16/20 16:24	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 16:24	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 16:24	1
2-Butanone	5.00	U	5.00		ug/L			08/16/20 16:24	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 16:24	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 16:24	1
Acetone	5.00	U	5.00		ug/L			08/16/20 16:24	1
Benzene	0.200	U	0.200		ug/L			08/16/20 16:24	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 16:24	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 16:24	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 16:24	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 16:24	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 16:24	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 16:24	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 16:24	1
Chloroform	**0.216**		0.200		ug/L			08/16/20 16:24	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 16:24	1
cis-1,2-Dichloroethene	**1.54**		0.200		ug/L			08/16/20 16:24	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 16:24	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 16:24	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 16:24	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 16:24	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 16:24	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 16:24	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 16:24	1
Styrene	0.500	U	0.500		ug/L			08/16/20 16:24	1
Tetrachloroethene	**0.332**		0.200		ug/L			08/16/20 16:24	1
Toluene	0.200	U	0.200		ug/L			08/16/20 16:24	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 16:24	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 16:24	1
Trichloroethene	**8.96**		0.200		ug/L			08/16/20 16:24	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 16:24	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 16:24	1
Vinyl chloride	**0.502**		0.200		ug/L			08/16/20 16:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*08/16/20 16:24*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*08/16/20 16:24*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/16/20 16:24*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/16/20 16:24*	*1*

Surrogate Summary

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

Job ID: 410-10167-2

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)
410-10167-17	BOP-07d(148)-0820	102	99	100	97
410-10167-18	BOP-56i-0820	107	107	96	99
410-10167-19	BOP-57ia-0820	107	108	95	98
410-10167-20	BOP-57ib-0820	109	108	97	99
410-10167-20 - DL	BOP-57ib-0820	107	109	95	99
410-10167-21	BOP-59i-0820	107	109	97	98
410-10167-22	D-07i-0820	107	110	96	99
410-10167-23	D-08i-0820	105	109	96	100
410-10167-24	D-12i-0820	109	110	95	99
410-10167-25	BOP-x-0820	108	110	97	99
410-10167-26	Trip Blanks	107	108	96	100
410-10167-27	E-13-0820	106	108	95	99
LCS 410-33649/5	Lab Control Sample	102	104	99	101
LCS 410-33649/7	Lab Control Sample	106	106	100	100
LCSD 410-33649/6	Lab Control Sample Dup	104	104	99	100
LCSD 410-33649/8	Lab Control Sample Dup	106	106	99	99
MB 410-33649/10	Method Blank	108	106	96	99

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 410-33649/10
Matrix: Water
Analysis Batch: 33649

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			08/16/20 11:37	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 11:37	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 11:37	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 11:37	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 11:37	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 11:37	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 11:37	1
2-Butanone	5.00	U	5.00		ug/L			08/16/20 11:37	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 11:37	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 11:37	1
Acetone	5.00	U	5.00		ug/L			08/16/20 11:37	1
Benzene	0.200	U	0.200		ug/L			08/16/20 11:37	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 11:37	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 11:37	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 11:37	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 11:37	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 11:37	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 11:37	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 11:37	1
Chloroform	0.200	U	0.200		ug/L			08/16/20 11:37	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 11:37	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 11:37	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 11:37	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 11:37	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 11:37	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 11:37	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 11:37	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 11:37	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 11:37	1
Styrene	0.500	U	0.500		ug/L			08/16/20 11:37	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/16/20 11:37	1
Toluene	0.200	U	0.200		ug/L			08/16/20 11:37	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 11:37	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 11:37	1
Trichloroethene	0.200	U	0.200		ug/L			08/16/20 11:37	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 11:37	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 11:37	1
Vinyl chloride	0.200	U	0.200		ug/L			08/16/20 11:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*08/16/20 11:37*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*08/16/20 11:37*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*08/16/20 11:37*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/16/20 11:37*	*1*

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

Lab Sample ID: LCS 410-33649/5
Matrix: Water
Analysis Batch: 33649

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	5.133		ug/L		103	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.364		ug/L		107	75 - 123
1,1,2-Trichloroethane	5.00	5.609		ug/L		112	80 - 120
1,1-Dichloroethane	5.00	5.437		ug/L		109	74 - 120
1,1-Dichloroethene	5.00	5.127		ug/L		103	80 - 131
1,2-Dichloroethane	5.00	5.680		ug/L		114	69 - 122
1,2-Dichloropropane	5.00	5.528		ug/L		111	80 - 120
2-Butanone	37.5	36.83		ug/L		98	59 - 141
2-Hexanone	25.0	24.73		ug/L		99	52 - 140
4-Methyl-2-pentanone	25.0	23.39		ug/L		94	55 - 140
Acetone	37.5	35.53		ug/L		95	60 - 146
Benzene	5.00	5.146		ug/L		103	80 - 120
Bromodichloromethane	5.00	5.456		ug/L		109	73 - 124
Bromoform	5.00	5.295		ug/L		106	49 - 144
Bromomethane	5.00	4.966		ug/L		99	60 - 136
Carbon disulfide	5.00	5.045		ug/L		101	67 - 130
Carbon tetrachloride	5.00	5.091		ug/L		102	64 - 141
Chlorobenzene	5.00	5.213		ug/L		104	80 - 120
Chloroethane	5.00	4.967		ug/L		99	63 - 120
Chloroform	5.00	5.462		ug/L		109	80 - 120
Chloromethane	5.00	4.846		ug/L		97	56 - 124
cis-1,2-Dichloroethene	5.00	5.428		ug/L		109	80 - 122
cis-1,3-Dichloropropene	5.00	5.091		ug/L		102	67 - 121
Dibromochloromethane	5.00	5.467		ug/L		109	64 - 138
Ethylbenzene	5.00	5.060		ug/L		101	80 - 120
Freon 113	5.00	4.542		ug/L		91	75 - 133
m&p-Xylene	10.0	10.28		ug/L		103	80 - 120
Methylene Chloride	5.00	5.104		ug/L		102	80 - 120
o-Xylene	5.00	4.979		ug/L		100	80 - 120
Styrene	5.00	5.094		ug/L		102	80 - 120
Tetrachloroethene	5.00	4.963		ug/L		99	80 - 120
Toluene	5.00	5.139		ug/L		103	80 - 120
trans-1,2-Dichloroethene	5.00	5.137		ug/L		103	80 - 122
trans-1,3-Dichloropropene	5.00	5.086		ug/L		102	61 - 129
Trichloroethene	5.00	5.200		ug/L		104	80 - 120
Trichlorofluoromethane	5.00	5.357		ug/L		107	62 - 136
Vinyl chloride	5.00	4.879		ug/L		98	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

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

Lab Sample ID: LCS 410-33649/7
Matrix: Water
Analysis Batch: 33649

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	13.08		ug/L		105	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-33649/6
Matrix: Water
Analysis Batch: 33649

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	5.104		ug/L		102	78 - 126	1	30
1,1,2,2-Tetrachloroethane			5.00	5.429		ug/L		109	75 - 123	1	30
1,1,2-Trichloroethane			5.00	5.502		ug/L		110	80 - 120	2	30
1,1-Dichloroethane			5.00	5.376		ug/L		108	74 - 120	1	30
1,1-Dichloroethene			5.00	5.139		ug/L		103	80 - 131	0	30
1,2-Dichloroethane			5.00	5.670		ug/L		113	69 - 122	0	30
1,2-Dichloropropane			5.00	5.428		ug/L		109	80 - 120	2	30
2-Butanone			37.5	40.02		ug/L		107	59 - 141	8	30
2-Hexanone			25.0	25.63		ug/L		103	52 - 140	4	30
4-Methyl-2-pentanone			25.0	24.57		ug/L		98	55 - 140	5	30
Acetone			37.5	34.35		ug/L		92	60 - 146	3	30
Benzene			5.00	5.120		ug/L		102	80 - 120	1	30
Bromodichloromethane			5.00	5.416		ug/L		108	73 - 124	1	30
Bromoform			5.00	5.302		ug/L		106	49 - 144	0	30
Bromomethane			5.00	4.806		ug/L		96	60 - 136	3	30
Carbon disulfide			5.00	4.972		ug/L		99	67 - 130	1	30
Carbon tetrachloride			5.00	5.028		ug/L		101	64 - 141	1	30
Chlorobenzene			5.00	5.165		ug/L		103	80 - 120	1	30
Chloroethane			5.00	4.886		ug/L		98	63 - 120	2	30
Chloroform			5.00	5.375		ug/L		107	80 - 120	2	30
Chloromethane			5.00	4.633		ug/L		93	56 - 124	4	30
cis-1,2-Dichloroethene			5.00	5.312		ug/L		106	80 - 122	2	30
cis-1,3-Dichloropropene			5.00	5.055		ug/L		101	67 - 121	1	30
Dibromochloromethane			5.00	5.409		ug/L		108	64 - 138	1	30
Ethylbenzene			5.00	5.002		ug/L		100	80 - 120	1	30
Freon 113			5.00	4.496		ug/L		90	75 - 133	1	30
m&p-Xylene			10.0	10.20		ug/L		102	80 - 120	1	30
Methylene Chloride			5.00	5.086		ug/L		102	80 - 120	0	30
o-Xylene			5.00	4.971		ug/L		99	80 - 120	0	30
Styrene			5.00	5.000		ug/L		100	80 - 120	2	30
Tetrachloroethene			5.00	4.969		ug/L		99	80 - 120	0	30
Toluene			5.00	5.053		ug/L		101	80 - 120	2	30
trans-1,2-Dichloroethene			5.00	5.118		ug/L		102	80 - 122	0	30
trans-1,3-Dichloropropene			5.00	5.008		ug/L		100	61 - 129	2	30
Trichloroethene			5.00	5.233		ug/L		105	80 - 120	1	30

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

Lab Sample ID: LCSD 410-33649/6
Matrix: Water
Analysis Batch: 33649

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	5.169		ug/L		103	62 - 136	4	30
Vinyl chloride			5.00	4.705		ug/L		94	60 - 125	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-33649/8
Matrix: Water
Analysis Batch: 33649

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	12.72		ug/L		102	38 - 145	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

QC Association Summary

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

Job ID: 410-10167-2

GC/MS VOA

Analysis Batch: 33646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10167-17	BOP-07d(148)-0820	Total/NA	Water	8260C LL	

Analysis Batch: 33649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10167-18	BOP-56i-0820	Total/NA	Water	8260C LL	
410-10167-19	BOP-57ia-0820	Total/NA	Water	8260C LL	
410-10167-20	BOP-57ib-0820	Total/NA	Water	8260C LL	
410-10167-20 - DL	BOP-57ib-0820	Total/NA	Water	8260C LL	
410-10167-21	BOP-59i-0820	Total/NA	Water	8260C LL	
410-10167-22	D-07i-0820	Total/NA	Water	8260C LL	
410-10167-23	D-08i-0820	Total/NA	Water	8260C LL	
410-10167-24	D-12i-0820	Total/NA	Water	8260C LL	
410-10167-25	BOP-x-0820	Total/NA	Water	8260C LL	
410-10167-26	Trip Blanks	Total/NA	Water	8260C LL	
410-10167-27	E-13-0820	Total/NA	Water	8260C LL	
MB 410-33649/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-33649/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-33649/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-33649/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-33649/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Lab Chronicle

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

Job ID: 410-10167-2

Client Sample ID: BOP-07d(148)-0820
Date Collected: 08/07/20 13:15
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-17
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33646	08/16/20 19:58	R64Z	ELLE

Client Sample ID: BOP-56i-0820
Date Collected: 08/07/20 13:20
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-18
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33649	08/16/20 12:47	R64Z	ELLE

Client Sample ID: BOP-57ia-0820
Date Collected: 08/07/20 13:40
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-19
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33649	08/16/20 13:08	R64Z	ELLE

Client Sample ID: BOP-57ib-0820
Date Collected: 08/07/20 14:00
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-20
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33649	08/16/20 13:30	R64Z	ELLE
Total/NA	Analysis	8260C LL	DL	10	33649	08/16/20 13:51	R64Z	ELLE

Client Sample ID: BOP-59i-0820
Date Collected: 08/07/20 13:00
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-21
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33649	08/16/20 14:13	R64Z	ELLE

Client Sample ID: D-07i-0820
Date Collected: 08/07/20 10:30
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-22
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33649	08/16/20 14:57	R64Z	ELLE

Client Sample ID: D-08i-0820
Date Collected: 08/07/20 10:45
Date Received: 08/08/20 10:19

Lab Sample ID: 410-10167-23
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33649	08/16/20 15:18	R64Z	ELLE

Lab Chronicle

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

Job ID: 410-10167-2

Client Sample ID: D-12i-0820
Lab Sample ID: 410-10167-24
Date Collected: 08/07/20 11:00
Matrix: Water
Date Received: 08/08/20 10:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33649	08/16/20 15:40	R64Z	ELLE

Client Sample ID: BOP-x-0820
Lab Sample ID: 410-10167-25
Date Collected: 08/07/20 12:00
Matrix: Water
Date Received: 08/08/20 10:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33649	08/16/20 16:02	R64Z	ELLE

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10167-26
Date Collected: 08/07/20 00:00
Matrix: Water
Date Received: 08/08/20 10:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33649	08/16/20 12:03	R64Z	ELLE

Client Sample ID: E-13-0820
Lab Sample ID: 410-10167-27
Date Collected: 08/07/20 11:15
Matrix: Water
Date Received: 08/08/20 10:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33649	08/16/20 16:24	R64Z	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: 410-10167-2
Project/Site: Boeing Portland/0025116.620.640

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260C LL		Water	1,1,1-Trichloroethane
8260C LL		Water	1,1,2,2-Tetrachloroethane
8260C LL		Water	1,1,2-Trichloroethane
8260C LL		Water	1,1-Dichloroethane
8260C LL		Water	1,1-Dichloroethene
8260C LL		Water	1,2-Dichloroethane
8260C LL		Water	1,2-Dichloropropane
8260C LL		Water	2-Butanone
8260C LL		Water	2-Hexanone
8260C LL		Water	4-Methyl-2-pentanone
8260C LL		Water	Acetone
8260C LL		Water	Benzene
8260C LL		Water	Bromodichloromethane
8260C LL		Water	Bromoform
8260C LL		Water	Bromomethane
8260C LL		Water	Carbon disulfide
8260C LL		Water	Carbon tetrachloride
8260C LL		Water	Chlorobenzene
8260C LL		Water	Chloroethane
8260C LL		Water	Chloroform
8260C LL		Water	Chloromethane
8260C LL		Water	cis-1,2-Dichloroethene
8260C LL		Water	cis-1,3-Dichloropropene
8260C LL		Water	Dibromochloromethane
8260C LL		Water	Ethylbenzene
8260C LL		Water	Freon 113
8260C LL		Water	m&p-Xylene
8260C LL		Water	Methylene Chloride
8260C LL		Water	o-Xylene
8260C LL		Water	Styrene
8260C LL		Water	Tetrachloroethene
8260C LL		Water	Toluene
8260C LL		Water	trans-1,2-Dichloroethene
8260C LL		Water	trans-1,3-Dichloropropene
8260C LL		Water	Trichloroethene
8260C LL		Water	Trichlorofluoromethane
8260C LL		Water	Vinyl acetate
8260C LL		Water	Vinyl chloride

Method Summary

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

Job ID: 410-10167-2

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.
Project/Site: Boeing Portland/0025116.620.640

Job ID: 410-10167-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-10167-17	BOP-07d(148)-0820	Water	08/07/20 13:15	08/08/20 10:19	
410-10167-18	BOP-56i-0820	Water	08/07/20 13:20	08/08/20 10:19	
410-10167-19	BOP-57ia-0820	Water	08/07/20 13:40	08/08/20 10:19	
410-10167-20	BOP-57ib-0820	Water	08/07/20 14:00	08/08/20 10:19	
410-10167-21	BOP-59i-0820	Water	08/07/20 13:00	08/08/20 10:19	
410-10167-22	D-07i-0820	Water	08/07/20 10:30	08/08/20 10:19	
410-10167-23	D-08i-0820	Water	08/07/20 10:45	08/08/20 10:19	
410-10167-24	D-12i-0820	Water	08/07/20 11:00	08/08/20 10:19	
410-10167-25	BOP-x-0820	Water	08/07/20 12:00	08/08/20 10:19	
410-10167-26	Trip Blanks	Water	08/07/20 00:00	08/08/20 10:19	
410-10167-27	E-13-0820	Water	08/07/20 11:15	08/08/20 10:19	

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories Environmental use only
Acct. # _____ Group # _____ Sample # _____
Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Gresham, Oregon
Site Project: Boeing of Portland
Site Program/#: 002S116.120.0412
Boeing PM: Debbie Taege
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: VOC (38 list)	(5) Remarks/Comments
BOP-D7d(148)-0820	8/7/20	1515	H_2O	3	X	
BOP-S6i-0820		1320			X	
BOP-S7ia-0820		1340			X	
BOP-S7ib-0820		1400			X	
BOP-S9i-0820		1300			X	
D-07i-0820		10:30			X	
D-08i-0820		10:45			X	
D-12i-0820		11:00			X	
~~LS-2-0820~~				WHL		
BOP-X-0820	↓	12:00	↓	↓	X	
Trip blanks	—	—	H_2O	1 ~~2~~ WHL	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. Hyung Lyu	8/7/20 1620		

Relinquished by commercial carrier (circle): UPS FedEx Other: _____
Temperature upon Receipt: 1 °C 1.0
Custody Seals Intact?: Yes No

(7)

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____ For Eurofins Lancaster Laboratories Environmental use only Group # _____ Sample # _____
Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Gresham, Oregon
Site Project: Boeing of Portland
Site Program/#: 00251R6.120.1412
Boeing PM: Debbie Taeye
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: VOC (300 list)	(5) Remarks/Comments
BOP-D7d(148)-0820	8/7/20	1515	H_2O	3	X	
BOP-S6i-0820		1320			X	
BOP-S7ia-0820		1340			X	
BOP-S7ib-0820		1400			X	
BOP-S9i-0820		1300			X	
D-07i-0820		10:30			X	
D-08i-0820		10:45			X	
D-12i-0820		11:00			X	
~~LS-2-0820~~				WHL		
BOP-X-0820	↓	12:00	↓	↓	X	Revised COC Chromite 8/11/20
Trip blanks	—	—	H_2O	1 ZVOC	X	
E-13-0820	8/7/20	11:15	H_2O		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 (7)
W. Kyong Lyn	8/7/20 1620		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time 8/8/20 1019
Relinquished by commercial carrier (circle): UPS FedEx Other:		Temperature upon Receipt: 1.1 °C 1.0	
		Custody Seals Intact? Yes No	

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

Boeing

eurofins | Lancaster Laboratories Environmental

Acct. # _____ Group # _____ Sample # _____

For Eurofins Lancaster Laboratories Environmental use only

Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Gresham, Oregon
Site Project: Boeing of Portland
Site Program/#: 0025156.120.0412
Boeing PM: Debbie Taeye
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: VOC (30 list)
BOP-D7d(148)-0820	8/7/20	1515	H_2O	3	X
BOP-S6i-0820		1320			X
BOP-S7ia-0820		1340			X
BOP-S7ib-0820		1400			X
BOP-S9i-0820		1300			X
D-07i-0820		10:30			X
D-08i-0820		10:45			X
D-12i-0820		11:00			X
~~LS-2 0820~~				WHL	
BOP-X-0820	↓	12:00	↓	↓	X
Trip blanks	—	—	H_2O	1 Z WHL	X
E-13-0820	8/7/20	11:15	H_2O		X

Revised Chromium

(5) Turnaround Time Requested (please circle)

Standard 5 day 9 day

Relinquished by: [illegible] Date/Time: 8/7/20 16[illegible]

Received by: _____ Date/Time: _____

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 410-10167-2

Login Number: 10167
List Number: 1
Creator: Rivera-Santa, Julissa

List Source: Eurofins Lancaster Laboratories Env

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.	N/A	
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	Received extra samples not listed on COC.
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	

eurofins | Environment Testing America



ANALYTICAL REPORT

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

Laboratory Job ID: 410-10260-1
Client Project/Site: Boeing of Portland/0025116.120.412

For:
Landau & Associates, Inc.
Sound View Plaza, 130 2nd Ave S
Edmonds, Washington 98020-9129

Attn: Chris Kimmel

Authorized for release by:
9/4/2020 3:10:09 PM

Kay Hower, Principal Project Manager
(717)556-7364
kayhower@eurofinsus.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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 recoveries that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result.

* 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 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. 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 LANACASTER 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. 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.



Kay Hower
Principal Project Manager
9/4/2020 3:10:09 PM

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 6
Detection Summary 8
Client Sample Results 11
Surrogate Summary 30
QC Sample Results 32
QC Association Summary 48
Lab Chronicle 52
Certification Summary 55
Method Summary 57
Sample Summary 58
Chain of Custody 59
Receipt Checklists 60

Definitions/Glossary

Client: Landau & Associates, Inc. Job ID: 410-10260-1
Project/Site: Boeing of Portland/0025116.120.412

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.

GC VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate recovery exceeds control limits

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Metals

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

General Chemistry

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)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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: 410-10260-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-10260-1

Receipt
The samples were received on 8/11/2020 11:09 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.5º C.

Receipt Exceptions
Sample has nine total containers marked on COC but ten containers were received.

E-7-0820 (410-10260-2)

GC/MS VOA
Method 8260C LL: The continuing calibration verification (CCV) associated with batch 410-33898 recovered above the upper control limit for 2-Hexanone (23%D). Non-detections of the affected analytes are reported. Any detections are considered estimated.

Method 8260C LL: The continuing calibration verification (CCV) associated with batch 410-33898 recovered outside acceptance criteria, low biased, for Bromoform (-22%D), Bromomethane (-22%D), Carbon disulfide (-41%D) and Vinyl chloride (-21%D). 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.

Method 8260C LL: The following analyte(s) recovered outside control limits but within laboratory generated limits for the LCS/LCSD associated with batch 410-33898: Carbon disulfide. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported for the associated samples: BOP-07i-0820 (410-10260-5), BOP-W-0820 (410-10260-6), BOP-09i-0820 (410-10260-7) and Trip Blanks (410-10260-8).

Method 8260C LL: The method requirement for no headspace was not met on analytical batch 410-34120. Due to the need for re-analysis, the container used for the following sample was previously opened and contained headspace: E-7-0820 (410-10260-2). The original sample container did not contain headspace. Significant headspace is defined as a bubble greater than 6 mm in diameter.

Method 8260C LL: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): E-7-0820 (410-10260-2). The sample container was received with headspace.

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

HPLC/IC
Method 300.0: The following sample was diluted due to the nature of the sample matrix: BOP-10i-0820 (410-10260-4). Elevated reporting limits (RLs) are provided.

Method 300.0: The continuing calibration verification (CCV) associated with batch 410-31944 recovered above the upper control limit for Sulfate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: BOP-16i-0820 (410-10260-1), E-6-0820 (410-10260-3), BOP-10i-0820 (410-10260-4), BOP-09i-0820 (410-10260-7) and (MB 410-31944/4).

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

GC VOA
Method RSK-175: The continuing calibration verification (CCV) associated with batch 410-32255 recovered above the upper control limit for Acetylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: BOP-16i-0820 (410-10260-1), E-7-0820 (410-10260-2), E-6-0820 (410-10260-3), BOP-10i-0820 (410-10260-4), BOP-07i-0820 (410-10260-5) and BOP-09i-0820 (410-10260-7).

Method RSK-175: The following sample(s) were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was 5 in trials 2 and 3 when verified by the laboratory: E-7-0820 (410-10260-2).

Job ID: 410-10260-1 (Continued)

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Conti

Method RSK-175: Surrogate recovery for the following sample was outside control limits: E-7-0820 (410-10260-2). Re-extraction and/or re-analysis was performed and surrogate recovery was outside control limits. Results are reported from all trials.

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

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

General Chemistry
Method SM 5310C: The reference method requires samples to be preserved to a pH of <2. The following sample(s) were received with insufficient preservation at a pH of 5: E-7-0820 (410-10260-2). The sample(s) were preserved to the appropriate pH in the laboratory.

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

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

Detection Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10260-1

Client Sample ID: BOP-16i-0820 — Lab Sample ID: 410-10260-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.774		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	0.365		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	2.22		0.200		ug/L	1		8260C LL	Total/NA
Methane (1C)	2460	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	2810		100		ug/L	20		RSK-175	Total/NA
Iron	4.17		0.200		mg/L	1		6010D	Total Recoverable
Iron	3.47		0.206		mg/L	1		6010D	Dissolved
Total Organic Carbon	1.70		1.00		mg/L	1		5310C-2011	Total/NA

Client Sample ID: E-7-0820 — Lab Sample ID: 410-10260-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.805		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone	3370	E	5.00		ug/L	1		8260C LL	Total/NA
Acetone	166		5.00		ug/L	1		8260C LL	Total/NA
Benzene	0.204		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	21.1		0.200		ug/L	1		8260C LL	Total/NA
Methylene Chloride	2.36		0.500		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	4.73		0.200		ug/L	1		8260C LL	Total/NA
Toluene	1.06		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	26.5	E	0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.348		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone - DL	5590	E	50.0		ug/L	10		8260C LL	Total/NA
Acetone - DL	172		50.0		ug/L	10		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	21.1		2.00		ug/L	10		8260C LL	Total/NA
Tetrachloroethene - DL	4.26		2.00		ug/L	10		8260C LL	Total/NA
Trichloroethene - DL	24.8		2.00		ug/L	10		8260C LL	Total/NA
2-Butanone - DL2	5490		500		ug/L	100		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL2	21.3		20.0		ug/L	100		8260C LL	Total/NA
Trichloroethene - DL2	25.0		20.0		ug/L	100		8260C LL	Total/NA
Methane (1C)	11700	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	18000		500		ug/L	100		RSK-175	Total/NA
Ethene (1C) - RA	5.33		5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - RA	10500	E	5.00		ug/L	1		RSK-175	Total/NA
Sulfate	555		500		mg/L	500		EPA 300.0 R2.1	Total/NA
Total Organic Carbon	20800		500		mg/L	500		5310C-2011	Total/NA

Client Sample ID: E-6-0820 — Lab Sample ID: 410-10260-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	15.9		5.00		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	48.8	E	0.200		ug/L	1		8260C LL	Total/NA
trans-1,2-Dichloroethene	3.18		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	0.227		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	77.3	E	0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	43.0		2.00		ug/L	10		8260C LL	Total/NA
trans-1,2-Dichloroethene - DL	2.86		2.00		ug/L	10		8260C LL	Total/NA
Vinyl chloride - DL	66.1		2.00		ug/L	10		8260C LL	Total/NA
Ethene (1C)	31.9		5.00		ug/L	1		RSK-175	Total/NA
Methane (1C)	2260	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	2660		100		ug/L	20		RSK-175	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: E-6-0820 (Continued) — Lab Sample ID: 410-10260-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	8.10		1.00		mg/L	1		5310C-2011	Total/NA

Client Sample ID: BOP-10i-0820 — Lab Sample ID: 410-10260-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	1.14		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone	121		5.00		ug/L	1		8260C LL	Total/NA
Acetone	11.2		5.00		ug/L	1		8260C LL	Total/NA
Carbon disulfide	0.523		0.500		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	14.8		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	9.66		0.200		ug/L	1		8260C LL	Total/NA
Toluene	0.733		0.200		ug/L	1		8260C LL	Total/NA
trans-1,2-Dichloroethene	0.497		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	34.1	E	0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.845		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone - DL	95.4		50.0		ug/L	10		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	14.2		2.00		ug/L	10		8260C LL	Total/NA
Tetrachloroethene - DL	11.3		2.00		ug/L	10		8260C LL	Total/NA
Trichloroethene - DL	30.3		2.00		ug/L	10		8260C LL	Total/NA
Methane (1C)	11900	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	12900		500		ug/L	100		RSK-175	Total/NA
Total Organic Carbon	1330		25.0		mg/L	25		5310C-2011	Total/NA

Client Sample ID: BOP-07i-0820 — Lab Sample ID: 410-10260-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	1.33		0.500		ug/L	1		8260C LL	Total/NA
1,1-Dichloroethane	0.838		0.500		ug/L	1		8260C LL	Total/NA
1,1-Dichloroethene	17.2		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone	14.3		5.00		ug/L	1		8260C LL	Total/NA
Chloroform	0.328		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	15.1		0.200		ug/L	1		8260C LL	Total/NA
Freon 113	1.90		0.500		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	4.49		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	203	E	0.200		ug/L	1		8260C LL	Total/NA
1,1-Dichloroethene - DL	15.0		2.00		ug/L	10		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	14.8		2.00		ug/L	10		8260C LL	Total/NA
Tetrachloroethene - DL	3.78		2.00		ug/L	10		8260C LL	Total/NA
Trichloroethene - DL	208		2.00		ug/L	10		8260C LL	Total/NA
Methane (1C)	274		5.00		ug/L	1		RSK-175	Total/NA
Nitrogen, Nitrate	1.67		0.500		mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	7.56		1.00		mg/L	1		EPA 300.0 R2.1	Total/NA
Total Organic Carbon	1.88		1.00		mg/L	1		5310C-2011	Total/NA

Client Sample ID: BOP-W-0820 — Lab Sample ID: 410-10260-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	1.58		0.500		ug/L	1		8260C LL	Total/NA
1,1-Dichloroethane	1.00		0.500		ug/L	1		8260C LL	Total/NA
1,1-Dichloroethene	20.7		0.200		ug/L	1		8260C LL	Total/NA
Chloroform	0.384		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	17.1		0.200		ug/L	1		8260C LL	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BOP-W-0820 (Continued)
Lab Sample ID: 410-10260-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Freon 113	2.24		0.500		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	4.71		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	235	E	0.200		ug/L	1		8260C LL	Total/NA
1,1-Dichloroethene - DL	15.8		2.00		ug/L	10		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	15.2		2.00		ug/L	10		8260C LL	Total/NA
Tetrachloroethene - DL	4.23		2.00		ug/L	10		8260C LL	Total/NA
Trichloroethene - DL	205		2.00		ug/L	10		8260C LL	Total/NA

Client Sample ID: BOP-09i-0820
Lab Sample ID: 410-10260-7

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	133		10.0		ug/L	2		8260C LL	Total/NA
Acetone	22.0		10.0		ug/L	2		8260C LL	Total/NA
cis-1,2-Dichloroethene	0.932		0.400		ug/L	2		8260C LL	Total/NA
Toluene	106	E	0.400		ug/L	2		8260C LL	Total/NA
Trichloroethene	0.499		0.400		ug/L	2		8260C LL	Total/NA
Vinyl chloride	0.956		0.400		ug/L	2		8260C LL	Total/NA
2-Butanone - DL	132		100		ug/L	20		8260C LL	Total/NA
Toluene - DL	98.3		4.00		ug/L	20		8260C LL	Total/NA
Methane (1C)	24900	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	30000		1000		ug/L	200		RSK-175	Total/NA
Total Organic Carbon	123		10.0		mg/L	10		5310C-2011	Total/NA

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10260-8

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: BOP-16i-0820

Date Collected: 08/10/20 10:05
Date Received: 08/11/20 11:09

Lab Sample ID: 410-10260-1

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			08/16/20 16:45	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 16:45	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 16:45	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 16:45	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 16:45	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 16:45	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 16:45	1
2-Butanone	5.00	U	5.00		ug/L			08/16/20 16:45	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 16:45	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 16:45	1
Acetone	5.00	U	5.00		ug/L			08/16/20 16:45	1
Benzene	0.200	U	0.200		ug/L			08/16/20 16:45	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 16:45	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 16:45	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 16:45	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 16:45	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 16:45	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 16:45	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 16:45	1
Chloroform	0.200	U	0.200		ug/L			08/16/20 16:45	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 16:45	1
cis-1,2-Dichloroethene	**0.774**		0.200		ug/L			08/16/20 16:45	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 16:45	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 16:45	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 16:45	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 16:45	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 16:45	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 16:45	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 16:45	1
Styrene	0.500	U	0.500		ug/L			08/16/20 16:45	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/16/20 16:45	1
Toluene	0.200	U	0.200		ug/L			08/16/20 16:45	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 16:45	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 16:45	1
Trichloroethene	**0.365**		0.200		ug/L			08/16/20 16:45	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 16:45	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 16:45	1
Vinyl chloride	**2.22**		0.200		ug/L			08/16/20 16:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*08/16/20 16:45*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 120*		*08/16/20 16:45*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/16/20 16:45*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/16/20 16:45*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 11:17	1
Ethane (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 11:17	1
Ethene (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 11:17	1

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10260-1

Client Sample ID: BOP-16i-0820

Date Collected: 08/10/20 10:05
Date Received: 08/11/20 11:09

Lab Sample ID: 410-10260-1
Matrix: Water

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**2460**	**E**	5.00		ug/L		08/12/20 08:02	08/12/20 11:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*86*		*28 - 140*	*08/12/20 08:02*	*08/12/20 11:17*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	100	U	100		ug/L		08/14/20 08:58	08/14/20 20:52	20
Ethane (1C)	100	U	100		ug/L		08/14/20 08:58	08/14/20 20:52	20
Ethene (1C)	100	U	100		ug/L		08/14/20 08:58	08/14/20 20:52	20
Methane (1C)	**2810**		100		ug/L		08/14/20 08:58	08/14/20 20:52	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*94*		*28 - 140*	*08/14/20 08:58*	*08/14/20 20:52*	*20*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.500	U F1	0.500		mg/L			08/11/20 16:50	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.00	U F1	5.00		mg/L			08/11/20 16:50	5

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**4.17**		0.200		mg/L		08/12/20 02:43	08/12/20 18:08	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**3.47**		0.206		mg/L		08/12/20 04:38	08/13/20 21:13	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1.70**		1.00		mg/L			08/18/20 16:40	1

Client Sample ID: E-7-0820

Date Collected: 08/10/20 11:38
Date Received: 08/11/20 11:09

Lab Sample ID: 410-10260-2
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			08/16/20 17:07	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 17:07	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 17:07	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 17:07	1
1,1-Dichloroethene	**0.805**		0.200		ug/L			08/16/20 17:07	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 17:07	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 17:07	1
2-Butanone	**3370**	**E**	5.00		ug/L			08/16/20 17:07	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 17:07	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 17:07	1
Acetone	**166**		5.00		ug/L			08/16/20 17:07	1

Client Sample ID: E-7-0820
Date Collected: 08/10/20 11:38
Date Received: 08/11/20 11:09

Lab Sample ID: 410-10260-2
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.204**		0.200		ug/L			08/16/20 17:07	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 17:07	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 17:07	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 17:07	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 17:07	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 17:07	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 17:07	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 17:07	1
Chloroform	0.200	U	0.200		ug/L			08/16/20 17:07	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 17:07	1
cis-1,2-Dichloroethene	**21.1**		0.200		ug/L			08/16/20 17:07	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 17:07	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 17:07	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 17:07	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 17:07	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 17:07	1
Methylene Chloride	**2.36**		0.500		ug/L			08/16/20 17:07	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 17:07	1
Styrene	0.500	U	0.500		ug/L			08/16/20 17:07	1
Tetrachloroethene	**4.73**		0.200		ug/L			08/16/20 17:07	1
Toluene	**1.06**		0.200		ug/L			08/16/20 17:07	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 17:07	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 17:07	1
Trichloroethene	**26.5**	**E**	0.200		ug/L			08/16/20 17:07	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 17:07	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 17:07	1
Vinyl chloride	**0.348**		0.200		ug/L			08/16/20 17:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*08/16/20 17:07*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*08/16/20 17:07*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*08/16/20 17:07*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*08/16/20 17:07*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.00	U	5.00		ug/L			08/16/20 17:28	10
1,1,2,2-Tetrachloroethane	2.00	U	2.00		ug/L			08/16/20 17:28	10
1,1,2-Trichloroethane	2.00	U	2.00		ug/L			08/16/20 17:28	10
1,1-Dichloroethane	5.00	U	5.00		ug/L			08/16/20 17:28	10
1,1-Dichloroethene	2.00	U	2.00		ug/L			08/16/20 17:28	10
1,2-Dichloroethane	2.00	U	2.00		ug/L			08/16/20 17:28	10
1,2-Dichloropropane	5.00	U	5.00		ug/L			08/16/20 17:28	10
2-Butanone	**5590**	**E**	50.0		ug/L			08/16/20 17:28	10
2-Hexanone	50.0	U	50.0		ug/L			08/16/20 17:28	10
4-Methyl-2-pentanone	50.0	U	50.0		ug/L			08/16/20 17:28	10
Acetone	**172**		50.0		ug/L			08/16/20 17:28	10
Benzene	2.00	U	2.00		ug/L			08/16/20 17:28	10
Bromodichloromethane	5.00	U	5.00		ug/L			08/16/20 17:28	10
Bromoform	10.0	U	10.0		ug/L			08/16/20 17:28	10

Client Sample ID: E-7-0820
Date Collected: 08/10/20 11:38
Date Received: 08/11/20 11:09

Lab Sample ID: 410-10260-2
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	5.00	U	5.00		ug/L			08/16/20 17:28	10
Carbon disulfide	5.00	U	5.00		ug/L			08/16/20 17:28	10
Carbon tetrachloride	2.00	U	2.00		ug/L			08/16/20 17:28	10
Chlorobenzene	5.00	U	5.00		ug/L			08/16/20 17:28	10
Chloroethane	5.00	U	5.00		ug/L			08/16/20 17:28	10
Chloroform	2.00	U	2.00		ug/L			08/16/20 17:28	10
Chloromethane	5.00	U	5.00		ug/L			08/16/20 17:28	10
cis-1,2-Dichloroethene	**21.1**		2.00		ug/L			08/16/20 17:28	10
cis-1,3-Dichloropropene	2.00	U	2.00		ug/L			08/16/20 17:28	10
Dibromochloromethane	5.00	U	5.00		ug/L			08/16/20 17:28	10
Ethylbenzene	5.00	U	5.00		ug/L			08/16/20 17:28	10
Freon 113	5.00	U	5.00		ug/L			08/16/20 17:28	10
m&p-Xylene	5.00	U	5.00		ug/L			08/16/20 17:28	10
Methylene Chloride	5.00	U	5.00		ug/L			08/16/20 17:28	10
o-Xylene	5.00	U	5.00		ug/L			08/16/20 17:28	10
Styrene	5.00	U	5.00		ug/L			08/16/20 17:28	10
Tetrachloroethene	**4.26**		2.00		ug/L			08/16/20 17:28	10
Toluene	2.00	U	2.00		ug/L			08/16/20 17:28	10
trans-1,2-Dichloroethene	2.00	U	2.00		ug/L			08/16/20 17:28	10
trans-1,3-Dichloropropene	2.00	U	2.00		ug/L			08/16/20 17:28	10
Trichloroethene	**24.8**		2.00		ug/L			08/16/20 17:28	10
Trichlorofluoromethane	5.00	U	5.00		ug/L			08/16/20 17:28	10
Vinyl acetate	5.00	U	5.00		ug/L			08/16/20 17:28	10
Vinyl chloride	2.00	U	2.00		ug/L			08/16/20 17:28	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/16/20 17:28*	*10*
Dibromofluoromethane (Surr)	*107*		*80 - 120*		*08/16/20 17:28*	*10*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*08/16/20 17:28*	*10*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/16/20 17:28*	*10*

Method: 8260C LL - Volatile Organic Compounds by GC/MS - DL2

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	50.0	U	50.0		ug/L			08/17/20 23:48	100
1,1,2,2-Tetrachloroethane	20.0	U	20.0		ug/L			08/17/20 23:48	100
1,1,2-Trichloroethane	20.0	U	20.0		ug/L			08/17/20 23:48	100
1,1-Dichloroethane	50.0	U	50.0		ug/L			08/17/20 23:48	100
1,1-Dichloroethene	20.0	U	20.0		ug/L			08/17/20 23:48	100
1,2-Dichloroethane	20.0	U	20.0		ug/L			08/17/20 23:48	100
1,2-Dichloropropane	50.0	U	50.0		ug/L			08/17/20 23:48	100
2-Butanone	**5490**		500		ug/L			08/17/20 23:48	100
2-Hexanone	500	U	500		ug/L			08/17/20 23:48	100
4-Methyl-2-pentanone	500	U	500		ug/L			08/17/20 23:48	100
Acetone	500	U	500		ug/L			08/17/20 23:48	100
Benzene	20.0	U	20.0		ug/L			08/17/20 23:48	100
Bromodichloromethane	50.0	U	50.0		ug/L			08/17/20 23:48	100
Bromoform	100	U	100		ug/L			08/17/20 23:48	100
Bromomethane	50.0	U	50.0		ug/L			08/17/20 23:48	100
Carbon disulfide	50.0	U	50.0		ug/L			08/17/20 23:48	100
Carbon tetrachloride	20.0	U	20.0		ug/L			08/17/20 23:48	100

Client Sample ID: E-7-0820

Date Collected: 08/10/20 11:38
Date Received: 08/11/20 11:09

Lab Sample ID: 410-10260-2

Matrix: Water

Method: 8260C LL - Volatile Organic Compounds by GC/MS - DL2 (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	50.0	U	50.0		ug/L			08/17/20 23:48	100
Chloroethane	50.0	U	50.0		ug/L			08/17/20 23:48	100
Chloroform	20.0	U	20.0		ug/L			08/17/20 23:48	100
Chloromethane	50.0	U	50.0		ug/L			08/17/20 23:48	100
cis-1,2-Dichloroethene	**21.3**		20.0		ug/L			08/17/20 23:48	100
cis-1,3-Dichloropropene	20.0	U	20.0		ug/L			08/17/20 23:48	100
Dibromochloromethane	50.0	U	50.0		ug/L			08/17/20 23:48	100
Ethylbenzene	50.0	U	50.0		ug/L			08/17/20 23:48	100
Freon 113	50.0	U	50.0		ug/L			08/17/20 23:48	100
m&p-Xylene	50.0	U	50.0		ug/L			08/17/20 23:48	100
Methylene Chloride	50.0	U	50.0		ug/L			08/17/20 23:48	100
o-Xylene	50.0	U	50.0		ug/L			08/17/20 23:48	100
Styrene	50.0	U	50.0		ug/L			08/17/20 23:48	100
Tetrachloroethene	20.0	U	20.0		ug/L			08/17/20 23:48	100
Toluene	20.0	U	20.0		ug/L			08/17/20 23:48	100
trans-1,2-Dichloroethene	20.0	U	20.0		ug/L			08/17/20 23:48	100
trans-1,3-Dichloropropene	20.0	U	20.0		ug/L			08/17/20 23:48	100
Trichloroethene	**25.0**		20.0		ug/L			08/17/20 23:48	100
Trichlorofluoromethane	50.0	U	50.0		ug/L			08/17/20 23:48	100
Vinyl acetate	50.0	U	50.0		ug/L			08/17/20 23:48	100
Vinyl chloride	20.0	U	20.0		ug/L			08/17/20 23:48	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*08/17/20 23:48*	*100*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*08/17/20 23:48*	*100*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*08/17/20 23:48*	*100*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/17/20 23:48*	*100*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 12:15	1
Ethane (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 12:15	1
Ethene (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 12:15	1
Methane (1C)	**11700**	**E**	5.00		ug/L		08/12/20 08:02	08/12/20 12:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*1065*	*X*	*28 - 140*	*08/12/20 08:02*	*08/12/20 12:15*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	500	U	500		ug/L		08/14/20 08:58	08/14/20 21:10	100
Ethane (1C)	500	U	500		ug/L		08/14/20 08:58	08/14/20 21:10	100
Ethene (1C)	500	U	500		ug/L		08/14/20 08:58	08/14/20 21:10	100
Methane (1C)	**18000**		500		ug/L		08/14/20 08:58	08/14/20 21:10	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*92*		*28 - 140*	*08/14/20 08:58*	*08/14/20 21:10*	*100*

Method: RSK-175 - Dissolved Gases (GC) - RA

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/18/20 08:32	08/18/20 10:34	1

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10260-1

Client Sample ID: E-7-0820

Date Collected: 08/10/20 11:38
Date Received: 08/11/20 11:09

Lab Sample ID: 410-10260-2

Matrix: Water

Method: RSK-175 - Dissolved Gases (GC) - RA (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	5.00	U	5.00		ug/L		08/18/20 08:32	08/18/20 10:34	1
Ethene (1C)	**5.33**		5.00		ug/L		08/18/20 08:32	08/18/20 10:34	1
Methane (1C)	**10500**	**E**	5.00		ug/L		08/18/20 08:32	08/18/20 10:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*1280*	*X*	*28 - 140*	*08/18/20 08:32*	*08/18/20 10:34*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**555**		500		mg/L			08/13/20 08:17	500

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**20800**		500		mg/L			08/19/20 16:42	500

Client Sample ID: E-6-0820

Date Collected: 08/10/20 12:54
Date Received: 08/11/20 11:09

Lab Sample ID: 410-10260-3

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			08/16/20 17:50	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 17:50	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 17:50	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 17:50	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 17:50	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 17:50	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 17:50	1
2-Butanone	5.00	U	5.00		ug/L			08/16/20 17:50	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 17:50	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 17:50	1
Acetone	**15.9**		5.00		ug/L			08/16/20 17:50	1
Benzene	0.200	U	0.200		ug/L			08/16/20 17:50	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 17:50	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 17:50	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 17:50	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 17:50	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 17:50	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 17:50	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 17:50	1
Chloroform	0.200	U	0.200		ug/L			08/16/20 17:50	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 17:50	1
cis-1,2-Dichloroethene	**48.8**	**E**	0.200		ug/L			08/16/20 17:50	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 17:50	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 17:50	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 17:50	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 17:50	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 17:50	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 17:50	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 17:50	1
Styrene	0.500	U	0.500		ug/L			08/16/20 17:50	1

Client Sample ID: E-6-0820

Date Collected: 08/10/20 12:54
Date Received: 08/11/20 11:09

Lab Sample ID: 410-10260-3

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	0.200	U	0.200		ug/L			08/16/20 17:50	1
Toluene	0.200	U	0.200		ug/L			08/16/20 17:50	1
trans-1,2-Dichloroethene	**3.18**		0.200		ug/L			08/16/20 17:50	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 17:50	1
Trichloroethene	**0.227**		0.200		ug/L			08/16/20 17:50	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 17:50	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 17:50	1
Vinyl chloride	**77.3**	**E**	0.200		ug/L			08/16/20 17:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*08/16/20 17:50*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*08/16/20 17:50*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/16/20 17:50*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/16/20 17:50*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	2.00	U	2.00		ug/L			08/16/20 18:12	10
1,1,2-Trichloroethane	2.00	U	2.00		ug/L			08/16/20 18:12	10
1,1-Dichloroethane	5.00	U	5.00		ug/L			08/16/20 18:12	10
1,1-Dichloroethene	2.00	U	2.00		ug/L			08/16/20 18:12	10
1,2-Dichloroethane	2.00	U	2.00		ug/L			08/16/20 18:12	10
1,2-Dichloropropane	5.00	U	5.00		ug/L			08/16/20 18:12	10
2-Butanone	50.0	U	50.0		ug/L			08/16/20 18:12	10
2-Hexanone	50.0	U	50.0		ug/L			08/16/20 18:12	10
4-Methyl-2-pentanone	50.0	U	50.0		ug/L			08/16/20 18:12	10
Acetone	50.0	U	50.0		ug/L			08/16/20 18:12	10
Benzene	2.00	U	2.00		ug/L			08/16/20 18:12	10
Bromodichloromethane	5.00	U	5.00		ug/L			08/16/20 18:12	10
Bromoform	10.0	U	10.0		ug/L			08/16/20 18:12	10
Bromomethane	5.00	U	5.00		ug/L			08/16/20 18:12	10
Carbon disulfide	5.00	U	5.00		ug/L			08/16/20 18:12	10
Carbon tetrachloride	2.00	U	2.00		ug/L			08/16/20 18:12	10
Chlorobenzene	5.00	U	5.00		ug/L			08/16/20 18:12	10
Chloroethane	5.00	U	5.00		ug/L			08/16/20 18:12	10
Chloroform	2.00	U	2.00		ug/L			08/16/20 18:12	10
Chloromethane	5.00	U	5.00		ug/L			08/16/20 18:12	10
cis-1,2-Dichloroethene	**43.0**		2.00		ug/L			08/16/20 18:12	10
cis-1,3-Dichloropropene	2.00	U	2.00		ug/L			08/16/20 18:12	10
Dibromochloromethane	5.00	U	5.00		ug/L			08/16/20 18:12	10
Ethylbenzene	5.00	U	5.00		ug/L			08/16/20 18:12	10
Freon 113	5.00	U	5.00		ug/L			08/16/20 18:12	10
m&p-Xylene	5.00	U	5.00		ug/L			08/16/20 18:12	10
Methylene Chloride	5.00	U	5.00		ug/L			08/16/20 18:12	10
o-Xylene	5.00	U	5.00		ug/L			08/16/20 18:12	10
Styrene	5.00	U	5.00		ug/L			08/16/20 18:12	10
Tetrachloroethene	2.00	U	2.00		ug/L			08/16/20 18:12	10
Toluene	2.00	U	2.00		ug/L			08/16/20 18:12	10
trans-1,2-Dichloroethene	**2.86**		2.00		ug/L			08/16/20 18:12	10
trans-1,3-Dichloropropene	2.00	U	2.00		ug/L			08/16/20 18:12	10

Client Sample ID: E-6-0820

Date Collected: 08/10/20 12:54
Date Received: 08/11/20 11:09

Lab Sample ID: 410-10260-3

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	2.00	U	2.00		ug/L			08/16/20 18:12	10
Trichlorofluoromethane	5.00	U	5.00		ug/L			08/16/20 18:12	10
Vinyl acetate	5.00	U	5.00		ug/L			08/16/20 18:12	10
Vinyl chloride	**66.1**		2.00		ug/L			08/16/20 18:12	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/16/20 18:12*	*10*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*08/16/20 18:12*	*10*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/16/20 18:12*	*10*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/16/20 18:12*	*10*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 12:34	1
Ethane (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 12:34	1
Ethene (1C)	**31.9**		5.00		ug/L		08/12/20 08:02	08/12/20 12:34	1
Methane (1C)	**2260**	**E**	5.00		ug/L		08/12/20 08:02	08/12/20 12:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*72*		*28 - 140*	*08/12/20 08:02*	*08/12/20 12:34*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	100	U	100		ug/L		08/14/20 08:58	08/14/20 21:29	20
Ethane (1C)	100	U	100		ug/L		08/14/20 08:58	08/14/20 21:29	20
Ethene (1C)	100	U	100		ug/L		08/14/20 08:58	08/14/20 21:29	20
Methane (1C)	**2660**		100		ug/L		08/14/20 08:58	08/14/20 21:29	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*93*		*28 - 140*	*08/14/20 08:58*	*08/14/20 21:29*	*20*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.00	U	5.00		mg/L			08/11/20 17:56	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**8.10**		1.00		mg/L			08/18/20 17:07	1

Client Sample ID: BOP-10i-0820

Date Collected: 08/10/20 13:38
Date Received: 08/11/20 11:09

Lab Sample ID: 410-10260-4

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			08/16/20 18:34	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 18:34	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 18:34	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 18:34	1
1,1-Dichloroethene	**1.14**		0.200		ug/L			08/16/20 18:34	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 18:34	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 18:34	1

Client Sample ID: BOP-10i-0820
Lab Sample ID: 410-10260-4

Date Collected: 08/10/20 13:38
Matrix: Water

Date Received: 08/11/20 11:09

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone	**121**		5.00		ug/L			08/16/20 18:34	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 18:34	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 18:34	1
Acetone	**11.2**		5.00		ug/L			08/16/20 18:34	1
Benzene	0.200	U	0.200		ug/L			08/16/20 18:34	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 18:34	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 18:34	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 18:34	1
Carbon disulfide	**0.523**		0.500		ug/L			08/16/20 18:34	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 18:34	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 18:34	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 18:34	1
Chloroform	0.200	U	0.200		ug/L			08/16/20 18:34	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 18:34	1
cis-1,2-Dichloroethene	**14.8**		0.200		ug/L			08/16/20 18:34	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 18:34	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 18:34	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 18:34	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 18:34	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 18:34	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 18:34	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 18:34	1
Styrene	0.500	U	0.500		ug/L			08/16/20 18:34	1
Tetrachloroethene	**9.66**		0.200		ug/L			08/16/20 18:34	1
Toluene	**0.733**		0.200		ug/L			08/16/20 18:34	1
trans-1,2-Dichloroethene	**0.497**		0.200		ug/L			08/16/20 18:34	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 18:34	1
Trichloroethene	**34.1**	**E**	0.200		ug/L			08/16/20 18:34	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 18:34	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 18:34	1
Vinyl chloride	**0.845**		0.200		ug/L			08/16/20 18:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*08/16/20 18:34*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*08/16/20 18:34*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*08/16/20 18:34*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*08/16/20 18:34*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.00	U	5.00		ug/L			08/16/20 18:55	10
1,1,2,2-Tetrachloroethane	2.00	U	2.00		ug/L			08/16/20 18:55	10
1,1,2-Trichloroethane	2.00	U	2.00		ug/L			08/16/20 18:55	10
1,1-Dichloroethane	5.00	U	5.00		ug/L			08/16/20 18:55	10
1,1-Dichloroethene	2.00	U	2.00		ug/L			08/16/20 18:55	10
1,2-Dichloroethane	2.00	U	2.00		ug/L			08/16/20 18:55	10
1,2-Dichloropropane	5.00	U	5.00		ug/L			08/16/20 18:55	10
2-Butanone	**95.4**		50.0		ug/L			08/16/20 18:55	10
2-Hexanone	50.0	U	50.0		ug/L			08/16/20 18:55	10
4-Methyl-2-pentanone	50.0	U	50.0		ug/L			08/16/20 18:55	10

Client Sample ID: BOP-10i-0820
Lab Sample ID: 410-10260-4

Date Collected: 08/10/20 13:38
Matrix: Water

Date Received: 08/11/20 11:09

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetone	50.0	U	50.0		ug/L			08/16/20 18:55	10
Benzene	2.00	U	2.00		ug/L			08/16/20 18:55	10
Bromodichloromethane	5.00	U	5.00		ug/L			08/16/20 18:55	10
Bromoform	10.0	U	10.0		ug/L			08/16/20 18:55	10
Bromomethane	5.00	U	5.00		ug/L			08/16/20 18:55	10
Carbon disulfide	5.00	U	5.00		ug/L			08/16/20 18:55	10
Carbon tetrachloride	2.00	U	2.00		ug/L			08/16/20 18:55	10
Chlorobenzene	5.00	U	5.00		ug/L			08/16/20 18:55	10
Chloroethane	5.00	U	5.00		ug/L			08/16/20 18:55	10
Chloroform	2.00	U	2.00		ug/L			08/16/20 18:55	10
Chloromethane	5.00	U	5.00		ug/L			08/16/20 18:55	10
cis-1,2-Dichloroethene	**14.2**		2.00		ug/L			08/16/20 18:55	10
cis-1,3-Dichloropropene	2.00	U	2.00		ug/L			08/16/20 18:55	10
Dibromochloromethane	5.00	U	5.00		ug/L			08/16/20 18:55	10
Ethylbenzene	5.00	U	5.00		ug/L			08/16/20 18:55	10
Freon 113	5.00	U	5.00		ug/L			08/16/20 18:55	10
m&p-Xylene	5.00	U	5.00		ug/L			08/16/20 18:55	10
Methylene Chloride	5.00	U	5.00		ug/L			08/16/20 18:55	10
o-Xylene	5.00	U	5.00		ug/L			08/16/20 18:55	10
Styrene	5.00	U	5.00		ug/L			08/16/20 18:55	10
Tetrachloroethene	**11.3**		2.00		ug/L			08/16/20 18:55	10
Toluene	2.00	U	2.00		ug/L			08/16/20 18:55	10
trans-1,2-Dichloroethene	2.00	U	2.00		ug/L			08/16/20 18:55	10
trans-1,3-Dichloropropene	2.00	U	2.00		ug/L			08/16/20 18:55	10
Trichloroethene	**30.3**		2.00		ug/L			08/16/20 18:55	10
Trichlorofluoromethane	5.00	U	5.00		ug/L			08/16/20 18:55	10
Vinyl acetate	5.00	U	5.00		ug/L			08/16/20 18:55	10
Vinyl chloride	2.00	U	2.00		ug/L			08/16/20 18:55	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*08/16/20 18:55*	*10*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*08/16/20 18:55*	*10*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*08/16/20 18:55*	*10*
Toluene-d8 (Surr)	*101*		*80 - 120*		*08/16/20 18:55*	*10*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 12:53	1
Ethane (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 12:53	1
Ethene (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 12:53	1
Methane (1C)	**11900**	**E**	5.00		ug/L		08/12/20 08:02	08/12/20 12:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*65*		*28 - 140*	*08/12/20 08:02*	*08/12/20 12:53*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	500	U	500		ug/L		08/14/20 08:58	08/14/20 21:47	100
Ethane (1C)	500	U	500		ug/L		08/14/20 08:58	08/14/20 21:47	100
Ethene (1C)	500	U	500		ug/L		08/14/20 08:58	08/14/20 21:47	100

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10260-1

Client Sample ID: BOP-10i-0820

Lab Sample ID: 410-10260-4

Date Collected: 08/10/20 13:38
Matrix: Water
Date Received: 08/11/20 11:09

Method: RSK-175 - Dissolved Gases (GC) - DL (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**12900**		500		ug/L		08/14/20 08:58	08/14/20 21:47	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*89*		*28 - 140*	*08/14/20 08:58*	*08/14/20 21:47*	*100*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	500	U	500		mg/L			08/11/20 18:13	500

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1330**		25.0		mg/L			08/18/20 17:47	25

Client Sample ID: BOP-07i-0820

Lab Sample ID: 410-10260-5

Date Collected: 08/10/20 15:06
Matrix: Water
Date Received: 08/11/20 11:09

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**1.33**		0.500		ug/L			08/17/20 16:55	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/17/20 16:55	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/17/20 16:55	1
1,1-Dichloroethane	**0.838**		0.500		ug/L			08/17/20 16:55	1
1,1-Dichloroethene	**17.2**		0.200		ug/L			08/17/20 16:55	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/17/20 16:55	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/17/20 16:55	1
2-Butanone	**14.3**		5.00		ug/L			08/17/20 16:55	1
2-Hexanone	5.00	U	5.00		ug/L			08/17/20 16:55	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/17/20 16:55	1
Acetone	5.00	U	5.00		ug/L			08/17/20 16:55	1
Benzene	0.200	U	0.200		ug/L			08/17/20 16:55	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/17/20 16:55	1
Bromoform	1.00	U	1.00		ug/L			08/17/20 16:55	1
Bromomethane	0.500	U	0.500		ug/L			08/17/20 16:55	1
Carbon disulfide	0.500	U *	0.500		ug/L			08/17/20 16:55	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/17/20 16:55	1
Chlorobenzene	0.500	U	0.500		ug/L			08/17/20 16:55	1
Chloroethane	0.500	U	0.500		ug/L			08/17/20 16:55	1
Chloroform	**0.328**		0.200		ug/L			08/17/20 16:55	1
Chloromethane	0.500	U	0.500		ug/L			08/17/20 16:55	1
cis-1,2-Dichloroethene	**15.1**		0.200		ug/L			08/17/20 16:55	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 16:55	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/17/20 16:55	1
Ethylbenzene	0.500	U	0.500		ug/L			08/17/20 16:55	1
Freon 113	**1.90**		0.500		ug/L			08/17/20 16:55	1
m&p-Xylene	0.500	U	0.500		ug/L			08/17/20 16:55	1
Methylene Chloride	0.500	U	0.500		ug/L			08/17/20 16:55	1
o-Xylene	0.500	U	0.500		ug/L			08/17/20 16:55	1
Styrene	0.500	U	0.500		ug/L			08/17/20 16:55	1
Tetrachloroethene	**4.49**		0.200		ug/L			08/17/20 16:55	1
Toluene	0.200	U	0.200		ug/L			08/17/20 16:55	1

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10260-1

Client Sample ID: BOP-07i-0820

Date Collected: 08/10/20 15:06
Date Received: 08/11/20 11:09

Lab Sample ID: 410-10260-5

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 16:55	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 16:55	1
Trichloroethene	**203**	**E**	0.200		ug/L			08/17/20 16:55	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/17/20 16:55	1
Vinyl acetate	0.500	U	0.500		ug/L			08/17/20 16:55	1
Vinyl chloride	0.200	U	0.200		ug/L			08/17/20 16:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*08/17/20 16:55*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/17/20 16:55*	*1*
4-Bromofluorobenzene (Surr)	*109*		*80 - 120*		*08/17/20 16:55*	*1*
Toluene-d8 (Surr)	*109*		*80 - 120*		*08/17/20 16:55*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.00	U	5.00		ug/L			08/17/20 17:16	10
1,1,2,2-Tetrachloroethane	2.00	U	2.00		ug/L			08/17/20 17:16	10
1,1,2-Trichloroethane	2.00	U	2.00		ug/L			08/17/20 17:16	10
1,1-Dichloroethane	5.00	U	5.00		ug/L			08/17/20 17:16	10
1,1-Dichloroethene	**15.0**		2.00		ug/L			08/17/20 17:16	10
1,2-Dichloroethane	2.00	U	2.00		ug/L			08/17/20 17:16	10
1,2-Dichloropropane	5.00	U	5.00		ug/L			08/17/20 17:16	10
2-Butanone	50.0	U	50.0		ug/L			08/17/20 17:16	10
2-Hexanone	50.0	U	50.0		ug/L			08/17/20 17:16	10
4-Methyl-2-pentanone	50.0	U	50.0		ug/L			08/17/20 17:16	10
Acetone	50.0	U	50.0		ug/L			08/17/20 17:16	10
Benzene	2.00	U	2.00		ug/L			08/17/20 17:16	10
Bromodichloromethane	5.00	U	5.00		ug/L			08/17/20 17:16	10
Bromoform	10.0	U	10.0		ug/L			08/17/20 17:16	10
Bromomethane	5.00	U	5.00		ug/L			08/17/20 17:16	10
Carbon disulfide	5.00	U *	5.00		ug/L			08/17/20 17:16	10
Carbon tetrachloride	2.00	U	2.00		ug/L			08/17/20 17:16	10
Chlorobenzene	5.00	U	5.00		ug/L			08/17/20 17:16	10
Chloroethane	5.00	U	5.00		ug/L			08/17/20 17:16	10
Chloroform	2.00	U	2.00		ug/L			08/17/20 17:16	10
Chloromethane	5.00	U	5.00		ug/L			08/17/20 17:16	10
cis-1,2-Dichloroethene	**14.8**		2.00		ug/L			08/17/20 17:16	10
cis-1,3-Dichloropropene	2.00	U	2.00		ug/L			08/17/20 17:16	10
Dibromochloromethane	5.00	U	5.00		ug/L			08/17/20 17:16	10
Ethylbenzene	5.00	U	5.00		ug/L			08/17/20 17:16	10
Freon 113	5.00	U	5.00		ug/L			08/17/20 17:16	10
m&p-Xylene	5.00	U	5.00		ug/L			08/17/20 17:16	10
Methylene Chloride	5.00	U	5.00		ug/L			08/17/20 17:16	10
o-Xylene	5.00	U	5.00		ug/L			08/17/20 17:16	10
Styrene	5.00	U	5.00		ug/L			08/17/20 17:16	10
Tetrachloroethene	**3.78**		2.00		ug/L			08/17/20 17:16	10
Toluene	2.00	U	2.00		ug/L			08/17/20 17:16	10
trans-1,2-Dichloroethene	2.00	U	2.00		ug/L			08/17/20 17:16	10
trans-1,3-Dichloropropene	2.00	U	2.00		ug/L			08/17/20 17:16	10
Trichloroethene	**208**		2.00		ug/L			08/17/20 17:16	10

Client Sample ID: BOP-07i-0820

Lab Sample ID: 410-10260-5

Date Collected: 08/10/20 15:06

Matrix: Water

Date Received: 08/11/20 11:09

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	5.00	U	5.00		ug/L			08/17/20 17:16	10
Vinyl acetate	5.00	U	5.00		ug/L			08/17/20 17:16	10
Vinyl chloride	2.00	U	2.00		ug/L			08/17/20 17:16	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/17/20 17:16*	*10*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*08/17/20 17:16*	*10*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*08/17/20 17:16*	*10*
Toluene-d8 (Surr)	*104*		*80 - 120*		*08/17/20 17:16*	*10*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 13:12	1
Ethane (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 13:12	1
Ethene (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 13:12	1
Methane (1C)	**274**		5.00		ug/L		08/12/20 08:02	08/12/20 13:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*89*		*28 - 140*	*08/12/20 08:02*	*08/12/20 13:12*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**1.67**		0.500		mg/L			08/11/20 18:29	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**7.56**		1.00		mg/L			08/13/20 08:34	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1.88**		1.00		mg/L			08/18/20 18:00	1

Client Sample ID: BOP-W-0820

Lab Sample ID: 410-10260-6

Date Collected: 08/10/20 14:10

Matrix: Water

Date Received: 08/11/20 11:09

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**1.58**		0.500		ug/L			08/17/20 17:37	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/17/20 17:37	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/17/20 17:37	1
1,1-Dichloroethane	**1.00**		0.500		ug/L			08/17/20 17:37	1
1,1-Dichloroethene	**20.7**		0.200		ug/L			08/17/20 17:37	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/17/20 17:37	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/17/20 17:37	1
2-Butanone	5.00	U	5.00		ug/L			08/17/20 17:37	1
2-Hexanone	5.00	U	5.00		ug/L			08/17/20 17:37	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/17/20 17:37	1
Acetone	5.00	U	5.00		ug/L			08/17/20 17:37	1
Benzene	0.200	U	0.200		ug/L			08/17/20 17:37	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/17/20 17:37	1

Client: Landau & Associates, Inc.
Job ID: 410-10260-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: BOP-W-0820
Lab Sample ID: 410-10260-6
Date Collected: 08/10/20 14:10
Matrix: Water
Date Received: 08/11/20 11:09

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	1.00	U	1.00		ug/L			08/17/20 17:37	1
Bromomethane	0.500	U	0.500		ug/L			08/17/20 17:37	1
Carbon disulfide	0.500	U *	0.500		ug/L			08/17/20 17:37	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/17/20 17:37	1
Chlorobenzene	0.500	U	0.500		ug/L			08/17/20 17:37	1
Chloroethane	0.500	U	0.500		ug/L			08/17/20 17:37	1
Chloroform	**0.384**		0.200		ug/L			08/17/20 17:37	1
Chloromethane	0.500	U	0.500		ug/L			08/17/20 17:37	1
cis-1,2-Dichloroethene	**17.1**		0.200		ug/L			08/17/20 17:37	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 17:37	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/17/20 17:37	1
Ethylbenzene	0.500	U	0.500		ug/L			08/17/20 17:37	1
Freon 113	**2.24**		0.500		ug/L			08/17/20 17:37	1
m&p-Xylene	0.500	U	0.500		ug/L			08/17/20 17:37	1
Methylene Chloride	0.500	U	0.500		ug/L			08/17/20 17:37	1
o-Xylene	0.500	U	0.500		ug/L			08/17/20 17:37	1
Styrene	0.500	U	0.500		ug/L			08/17/20 17:37	1
Tetrachloroethene	**4.71**		0.200		ug/L			08/17/20 17:37	1
Toluene	0.200	U	0.200		ug/L			08/17/20 17:37	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 17:37	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 17:37	1
Trichloroethene	**235**	**E**	0.200		ug/L			08/17/20 17:37	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/17/20 17:37	1
Vinyl acetate	0.500	U	0.500		ug/L			08/17/20 17:37	1
Vinyl chloride	0.200	U	0.200		ug/L			08/17/20 17:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/17/20 17:37*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*08/17/20 17:37*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*08/17/20 17:37*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*08/17/20 17:37*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.00	U	5.00		ug/L			08/17/20 17:58	10
1,1,2,2-Tetrachloroethane	2.00	U	2.00		ug/L			08/17/20 17:58	10
1,1,2-Trichloroethane	2.00	U	2.00		ug/L			08/17/20 17:58	10
1,1-Dichloroethane	5.00	U	5.00		ug/L			08/17/20 17:58	10
1,1-Dichloroethene	**15.8**		2.00		ug/L			08/17/20 17:58	10
1,2-Dichloroethane	2.00	U	2.00		ug/L			08/17/20 17:58	10
1,2-Dichloropropane	5.00	U	5.00		ug/L			08/17/20 17:58	10
2-Butanone	50.0	U	50.0		ug/L			08/17/20 17:58	10
2-Hexanone	50.0	U	50.0		ug/L			08/17/20 17:58	10
4-Methyl-2-pentanone	50.0	U	50.0		ug/L			08/17/20 17:58	10
Acetone	50.0	U	50.0		ug/L			08/17/20 17:58	10
Benzene	2.00	U	2.00		ug/L			08/17/20 17:58	10
Bromodichloromethane	5.00	U	5.00		ug/L			08/17/20 17:58	10
Bromoform	10.0	U	10.0		ug/L			08/17/20 17:58	10
Bromomethane	5.00	U	5.00		ug/L			08/17/20 17:58	10
Carbon disulfide	5.00	U *	5.00		ug/L			08/17/20 17:58	10

Client Sample ID: BOP-W-0820

Lab Sample ID: 410-10260-6

Date Collected: 08/10/20 14:10

Matrix: Water

Date Received: 08/11/20 11:09

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	2.00	U	2.00		ug/L			08/17/20 17:58	10
Chlorobenzene	5.00	U	5.00		ug/L			08/17/20 17:58	10
Chloroethane	5.00	U	5.00		ug/L			08/17/20 17:58	10
Chloroform	2.00	U	2.00		ug/L			08/17/20 17:58	10
Chloromethane	5.00	U	5.00		ug/L			08/17/20 17:58	10
cis-1,2-Dichloroethene	**15.2**		2.00		ug/L			08/17/20 17:58	10
cis-1,3-Dichloropropene	2.00	U	2.00		ug/L			08/17/20 17:58	10
Dibromochloromethane	5.00	U	5.00		ug/L			08/17/20 17:58	10
Ethylbenzene	5.00	U	5.00		ug/L			08/17/20 17:58	10
Freon 113	5.00	U	5.00		ug/L			08/17/20 17:58	10
m&p-Xylene	5.00	U	5.00		ug/L			08/17/20 17:58	10
Methylene Chloride	5.00	U	5.00		ug/L			08/17/20 17:58	10
o-Xylene	5.00	U	5.00		ug/L			08/17/20 17:58	10
Styrene	5.00	U	5.00		ug/L			08/17/20 17:58	10
Tetrachloroethene	**4.23**		2.00		ug/L			08/17/20 17:58	10
Toluene	2.00	U	2.00		ug/L			08/17/20 17:58	10
trans-1,2-Dichloroethene	2.00	U	2.00		ug/L			08/17/20 17:58	10
trans-1,3-Dichloropropene	2.00	U	2.00		ug/L			08/17/20 17:58	10
Trichloroethene	**205**		2.00		ug/L			08/17/20 17:58	10
Trichlorofluoromethane	5.00	U	5.00		ug/L			08/17/20 17:58	10
Vinyl acetate	5.00	U	5.00		ug/L			08/17/20 17:58	10
Vinyl chloride	2.00	U	2.00		ug/L			08/17/20 17:58	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*08/17/20 17:58*	*10*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*08/17/20 17:58*	*10*
4-Bromofluorobenzene (Surr)	*112*		*80 - 120*		*08/17/20 17:58*	*10*
Toluene-d8 (Surr)	*112*		*80 - 120*		*08/17/20 17:58*	*10*

Client Sample ID: BOP-09i-0820

Lab Sample ID: 410-10260-7

Date Collected: 08/10/20 09:12

Matrix: Water

Date Received: 08/11/20 11:09

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.00	U	1.00		ug/L			08/17/20 18:20	2
1,1,2,2-Tetrachloroethane	0.400	U	0.400		ug/L			08/17/20 18:20	2
1,1,2-Trichloroethane	0.400	U	0.400		ug/L			08/17/20 18:20	2
1,1-Dichloroethane	1.00	U	1.00		ug/L			08/17/20 18:20	2
1,1-Dichloroethene	0.400	U	0.400		ug/L			08/17/20 18:20	2
1,2-Dichloroethane	0.400	U	0.400		ug/L			08/17/20 18:20	2
1,2-Dichloropropane	1.00	U	1.00		ug/L			08/17/20 18:20	2
2-Butanone	**133**		10.0		ug/L			08/17/20 18:20	2
2-Hexanone	10.0	U	10.0		ug/L			08/17/20 18:20	2
4-Methyl-2-pentanone	10.0	U	10.0		ug/L			08/17/20 18:20	2
Acetone	**22.0**		10.0		ug/L			08/17/20 18:20	2
Benzene	0.400	U	0.400		ug/L			08/17/20 18:20	2
Bromodichloromethane	1.00	U	1.00		ug/L			08/17/20 18:20	2
Bromoform	2.00	U	2.00		ug/L			08/17/20 18:20	2
Bromomethane	1.00	U	1.00		ug/L			08/17/20 18:20	2

Client Sample ID: BOP-09i-0820
Lab Sample ID: 410-10260-7

Date Collected: 08/10/20 09:12
Matrix: Water

Date Received: 08/11/20 11:09

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	1.00	U *	1.00		ug/L			08/17/20 18:20	2
Carbon tetrachloride	0.400	U	0.400		ug/L			08/17/20 18:20	2
Chlorobenzene	1.00	U	1.00		ug/L			08/17/20 18:20	2
Chloroethane	1.00	U	1.00		ug/L			08/17/20 18:20	2
Chloroform	0.400	U	0.400		ug/L			08/17/20 18:20	2
Chloromethane	1.00	U	1.00		ug/L			08/17/20 18:20	2
cis-1,2-Dichloroethene	**0.932**		0.400		ug/L			08/17/20 18:20	2
cis-1,3-Dichloropropene	0.400	U	0.400		ug/L			08/17/20 18:20	2
Dibromochloromethane	1.00	U	1.00		ug/L			08/17/20 18:20	2
Ethylbenzene	1.00	U	1.00		ug/L			08/17/20 18:20	2
Freon 113	1.00	U	1.00		ug/L			08/17/20 18:20	2
m&p-Xylene	1.00	U	1.00		ug/L			08/17/20 18:20	2
Methylene Chloride	1.00	U	1.00		ug/L			08/17/20 18:20	2
o-Xylene	1.00	U	1.00		ug/L			08/17/20 18:20	2
Styrene	1.00	U	1.00		ug/L			08/17/20 18:20	2
Tetrachloroethene	0.400	U	0.400		ug/L			08/17/20 18:20	2
Toluene	**106**	**E**	0.400		ug/L			08/17/20 18:20	2
trans-1,2-Dichloroethene	0.400	U	0.400		ug/L			08/17/20 18:20	2
trans-1,3-Dichloropropene	0.400	U	0.400		ug/L			08/17/20 18:20	2
Trichloroethene	**0.499**		0.400		ug/L			08/17/20 18:20	2
Trichlorofluoromethane	1.00	U	1.00		ug/L			08/17/20 18:20	2
Vinyl acetate	1.00	U	1.00		ug/L			08/17/20 18:20	2
Vinyl chloride	**0.956**		0.400		ug/L			08/17/20 18:20	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*08/17/20 18:20*	*2*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/17/20 18:20*	*2*
4-Bromofluorobenzene (Surr)	*110*		*80 - 120*		*08/17/20 18:20*	*2*
Toluene-d8 (Surr)	*110*		*80 - 120*		*08/17/20 18:20*	*2*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	10.0	U	10.0		ug/L			08/17/20 18:41	20
1,1,2,2-Tetrachloroethane	4.00	U	4.00		ug/L			08/17/20 18:41	20
1,1,2-Trichloroethane	4.00	U	4.00		ug/L			08/17/20 18:41	20
1,1-Dichloroethane	10.0	U	10.0		ug/L			08/17/20 18:41	20
1,1-Dichloroethene	4.00	U	4.00		ug/L			08/17/20 18:41	20
1,2-Dichloroethane	4.00	U	4.00		ug/L			08/17/20 18:41	20
1,2-Dichloropropane	10.0	U	10.0		ug/L			08/17/20 18:41	20
2-Butanone	**132**		100		ug/L			08/17/20 18:41	20
2-Hexanone	100	U	100		ug/L			08/17/20 18:41	20
4-Methyl-2-pentanone	100	U	100		ug/L			08/17/20 18:41	20
Acetone	100	U	100		ug/L			08/17/20 18:41	20
Benzene	4.00	U	4.00		ug/L			08/17/20 18:41	20
Bromodichloromethane	10.0	U	10.0		ug/L			08/17/20 18:41	20
Bromoform	20.0	U	20.0		ug/L			08/17/20 18:41	20
Bromomethane	10.0	U	10.0		ug/L			08/17/20 18:41	20
Carbon disulfide	10.0	U *	10.0		ug/L			08/17/20 18:41	20
Carbon tetrachloride	4.00	U	4.00		ug/L			08/17/20 18:41	20
Chlorobenzene	10.0	U	10.0		ug/L			08/17/20 18:41	20

Client: Landau & Associates, Inc.
Job ID: 410-10260-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: BOP-09i-0820
Lab Sample ID: 410-10260-7
Date Collected: 08/10/20 09:12
Matrix: Water
Date Received: 08/11/20 11:09

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	10.0	U	10.0		ug/L			08/17/20 18:41	20
Chloroform	4.00	U	4.00		ug/L			08/17/20 18:41	20
Chloromethane	10.0	U	10.0		ug/L			08/17/20 18:41	20
cis-1,2-Dichloroethene	4.00	U	4.00		ug/L			08/17/20 18:41	20
cis-1,3-Dichloropropene	4.00	U	4.00		ug/L			08/17/20 18:41	20
Dibromochloromethane	10.0	U	10.0		ug/L			08/17/20 18:41	20
Ethylbenzene	10.0	U	10.0		ug/L			08/17/20 18:41	20
Freon 113	10.0	U	10.0		ug/L			08/17/20 18:41	20
m&p-Xylene	10.0	U	10.0		ug/L			08/17/20 18:41	20
Methylene Chloride	10.0	U	10.0		ug/L			08/17/20 18:41	20
o-Xylene	10.0	U	10.0		ug/L			08/17/20 18:41	20
Styrene	10.0	U	10.0		ug/L			08/17/20 18:41	20
Tetrachloroethene	4.00	U	4.00		ug/L			08/17/20 18:41	20
Toluene	**98.3**		4.00		ug/L			08/17/20 18:41	20
trans-1,2-Dichloroethene	4.00	U	4.00		ug/L			08/17/20 18:41	20
trans-1,3-Dichloropropene	4.00	U	4.00		ug/L			08/17/20 18:41	20
Trichloroethene	4.00	U	4.00		ug/L			08/17/20 18:41	20
Trichlorofluoromethane	10.0	U	10.0		ug/L			08/17/20 18:41	20
Vinyl acetate	10.0	U	10.0		ug/L			08/17/20 18:41	20
Vinyl chloride	4.00	U	4.00		ug/L			08/17/20 18:41	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/17/20 18:41*	*20*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*08/17/20 18:41*	*20*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*08/17/20 18:41*	*20*
Toluene-d8 (Surr)	*103*		*80 - 120*		*08/17/20 18:41*	*20*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 13:31	1
Ethane (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 13:31	1
Ethene (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 13:31	1
Methane (1C)	**24900**	**E**	5.00		ug/L		08/12/20 08:02	08/12/20 13:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*80*		*28 - 140*	*08/12/20 08:02*	*08/12/20 13:31*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	1000	U	1000		ug/L		08/14/20 08:58	08/14/20 22:05	200
Ethane (1C)	1000	U	1000		ug/L		08/14/20 08:58	08/14/20 22:05	200
Ethene (1C)	1000	U	1000		ug/L		08/14/20 08:58	08/14/20 22:05	200
Methane (1C)	**30000**		1000		ug/L		08/14/20 08:58	08/14/20 22:05	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*91*		*28 - 140*	*08/14/20 08:58*	*08/14/20 22:05*	*200*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.00	U	5.00		mg/L			08/11/20 18:46	5

Client Sample ID: BOP-09i-0820
Lab Sample ID: 410-10260-7
Date Collected: 08/10/20 09:12
Matrix: Water
Date Received: 08/11/20 11:09

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	123		10.0		mg/L			08/18/20 18:14	10

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10260-8
Date Collected: 08/10/20 00:00
Matrix: Water
Date Received: 08/11/20 11:09

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			08/17/20 16:34	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/17/20 16:34	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/17/20 16:34	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/17/20 16:34	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 16:34	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/17/20 16:34	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/17/20 16:34	1
2-Butanone	5.00	U	5.00		ug/L			08/17/20 16:34	1
2-Hexanone	5.00	U	5.00		ug/L			08/17/20 16:34	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/17/20 16:34	1
Acetone	5.00	U	5.00		ug/L			08/17/20 16:34	1
Benzene	0.200	U	0.200		ug/L			08/17/20 16:34	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/17/20 16:34	1
Bromoform	1.00	U	1.00		ug/L			08/17/20 16:34	1
Bromomethane	0.500	U	0.500		ug/L			08/17/20 16:34	1
Carbon disulfide	0.500	U *	0.500		ug/L			08/17/20 16:34	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/17/20 16:34	1
Chlorobenzene	0.500	U	0.500		ug/L			08/17/20 16:34	1
Chloroethane	0.500	U	0.500		ug/L			08/17/20 16:34	1
Chloroform	0.200	U	0.200		ug/L			08/17/20 16:34	1
Chloromethane	0.500	U	0.500		ug/L			08/17/20 16:34	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 16:34	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 16:34	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/17/20 16:34	1
Ethylbenzene	0.500	U	0.500		ug/L			08/17/20 16:34	1
Freon 113	0.500	U	0.500		ug/L			08/17/20 16:34	1
m&p-Xylene	0.500	U	0.500		ug/L			08/17/20 16:34	1
Methylene Chloride	0.500	U	0.500		ug/L			08/17/20 16:34	1
o-Xylene	0.500	U	0.500		ug/L			08/17/20 16:34	1
Styrene	0.500	U	0.500		ug/L			08/17/20 16:34	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/17/20 16:34	1
Toluene	0.200	U	0.200		ug/L			08/17/20 16:34	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 16:34	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 16:34	1
Trichloroethene	0.200	U	0.200		ug/L			08/17/20 16:34	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/17/20 16:34	1
Vinyl acetate	0.500	U	0.500		ug/L			08/17/20 16:34	1
Vinyl chloride	0.200	U	0.200		ug/L			08/17/20 16:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/17/20 16:34*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*08/17/20 16:34*	*1*

Client: Landau & Associates, Inc.
Job ID: 410-10260-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10260-8
Date Collected: 08/10/20 00:00
Matrix: Water
Date Received: 08/11/20 11:09

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		08/17/20 16:34	1
Toluene-d8 (Surr)	103		80 - 120		08/17/20 16:34	1

Surrogate Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10260-1

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)
410-10260-1	BOP-16i-0820	108	110	95	99
410-10260-2	E-7-0820	103	105	99	102
410-10260-2 - DL	E-7-0820	107	107	99	98
410-10260-2 - DL2	E-7-0820	108	109	97	98
410-10260-3	E-6-0820	103	108	95	99
410-10260-3 - DL	E-6-0820	107	109	95	99
410-10260-4	BOP-10i-0820	104	106	100	101
410-10260-4 - DL	BOP-10i-0820	106	109	97	101
410-10260-5	BOP-07i-0820	100	102	109	109
410-10260-5 - DL	BOP-07i-0820	102	101	104	104
410-10260-6	BOP-W-0820	102	100	102	95
410-10260-6 - DL	BOP-W-0820	99	101	112	112
410-10260-7	BOP-09i-0820	99	102	110	110
410-10260-7 - DL	BOP-09i-0820	102	101	105	103
410-10260-8	Trip Blanks	102	101	102	103
LCS 410-33649/5	Lab Control Sample	102	104	99	101
LCS 410-33649/7	Lab Control Sample	106	106	100	100
LCS 410-33898/5	Lab Control Sample	99	106	104	104
LCS 410-33898/7	Lab Control Sample	101	102	108	106
LCS 410-34120/5	Lab Control Sample	104	106	99	100
LCS 410-34120/7	Lab Control Sample	107	106	100	100
LCSD 410-33649/6	Lab Control Sample Dup	104	104	99	100
LCSD 410-33649/8	Lab Control Sample Dup	106	106	99	99
LCSD 410-33898/6	Lab Control Sample Dup	102	102	107	103
LCSD 410-33898/8	Lab Control Sample Dup	99	99	104	103
LCSD 410-34120/6	Lab Control Sample Dup	104	104	99	99
LCSD 410-34120/8	Lab Control Sample Dup	104	106	100	99
MB 410-33649/10	Method Blank	108	106	96	99
MB 410-33898/10	Method Blank	102	102	102	105
MB 410-34120/10	Method Blank	107	109	97	99

Surrogate Legend

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

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		Propene1
Lab Sample ID	Client Sample ID	(28-140)
410-10260-1	BOP-16i-0820	86
410-10260-1 - DL	BOP-16i-0820	94
410-10260-2	E-7-0820	1065 X
410-10260-2 - DL	E-7-0820	92
410-10260-2 - RA	E-7-0820	1280 X
410-10260-3	E-6-0820	72
410-10260-3 - DL	E-6-0820	93

Surrogate Summary

Client: Landau & Associates, Inc.
Job ID: 410-10260-1
Project/Site: Boeing of Portland/0025116.120.412

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	Propene1 (28-140)						
410-10260-4	BOP-10i-0820	65						
410-10260-4 - DL	BOP-10i-0820	89						
410-10260-5	BOP-07i-0820	89						
410-10260-7	BOP-09i-0820	80						
410-10260-7 - DL	BOP-09i-0820	91						
LCS 410-32243/2-A	Lab Control Sample	106						
LCS 410-33217/2-A	Lab Control Sample	92						
LCS 410-34365/2-A	Lab Control Sample	104						
LCSD 410-32243/3-A	Lab Control Sample Dup	104						
LCSD 410-33217/3-A	Lab Control Sample Dup	97						
LCSD 410-34365/3-A	Lab Control Sample Dup	104						
MB 410-32243/1-A	Method Blank	102						
MB 410-33217/1-A	Method Blank	96						
MB 410-34365/1-A	Method Blank	105						

Surrogate Legend

Propene = Propene

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10260-1

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

Lab Sample ID: MB 410-33649/10
Matrix: Water
Analysis Batch: 33649

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			08/16/20 11:37	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/16/20 11:37	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/16/20 11:37	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/16/20 11:37	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 11:37	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/16/20 11:37	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/16/20 11:37	1
2-Butanone	5.00	U	5.00		ug/L			08/16/20 11:37	1
2-Hexanone	5.00	U	5.00		ug/L			08/16/20 11:37	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/16/20 11:37	1
Acetone	5.00	U	5.00		ug/L			08/16/20 11:37	1
Benzene	0.200	U	0.200		ug/L			08/16/20 11:37	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/16/20 11:37	1
Bromoform	1.00	U	1.00		ug/L			08/16/20 11:37	1
Bromomethane	0.500	U	0.500		ug/L			08/16/20 11:37	1
Carbon disulfide	0.500	U	0.500		ug/L			08/16/20 11:37	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/16/20 11:37	1
Chlorobenzene	0.500	U	0.500		ug/L			08/16/20 11:37	1
Chloroethane	0.500	U	0.500		ug/L			08/16/20 11:37	1
Chloroform	0.200	U	0.200		ug/L			08/16/20 11:37	1
Chloromethane	0.500	U	0.500		ug/L			08/16/20 11:37	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 11:37	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 11:37	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/16/20 11:37	1
Ethylbenzene	0.500	U	0.500		ug/L			08/16/20 11:37	1
Freon 113	0.500	U	0.500		ug/L			08/16/20 11:37	1
m&p-Xylene	0.500	U	0.500		ug/L			08/16/20 11:37	1
Methylene Chloride	0.500	U	0.500		ug/L			08/16/20 11:37	1
o-Xylene	0.500	U	0.500		ug/L			08/16/20 11:37	1
Styrene	0.500	U	0.500		ug/L			08/16/20 11:37	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/16/20 11:37	1
Toluene	0.200	U	0.200		ug/L			08/16/20 11:37	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/16/20 11:37	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/16/20 11:37	1
Trichloroethene	0.200	U	0.200		ug/L			08/16/20 11:37	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/16/20 11:37	1
Vinyl acetate	0.500	U	0.500		ug/L			08/16/20 11:37	1
Vinyl chloride	0.200	U	0.200		ug/L			08/16/20 11:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*08/16/20 11:37*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*08/16/20 11:37*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*08/16/20 11:37*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/16/20 11:37*	*1*

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

Lab Sample ID: LCS 410-33649/5
Matrix: Water
Analysis Batch: 33649

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	5.133		ug/L		103	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.364		ug/L		107	75 - 123
1,1,2-Trichloroethane	5.00	5.609		ug/L		112	80 - 120
1,1-Dichloroethane	5.00	5.437		ug/L		109	74 - 120
1,1-Dichloroethene	5.00	5.127		ug/L		103	80 - 131
1,2-Dichloroethane	5.00	5.680		ug/L		114	69 - 122
1,2-Dichloropropane	5.00	5.528		ug/L		111	80 - 120
2-Butanone	37.5	36.83		ug/L		98	59 - 141
2-Hexanone	25.0	24.73		ug/L		99	52 - 140
4-Methyl-2-pentanone	25.0	23.39		ug/L		94	55 - 140
Acetone	37.5	35.53		ug/L		95	60 - 146
Benzene	5.00	5.146		ug/L		103	80 - 120
Bromodichloromethane	5.00	5.456		ug/L		109	73 - 124
Bromoform	5.00	5.295		ug/L		106	49 - 144
Bromomethane	5.00	4.966		ug/L		99	60 - 136
Carbon disulfide	5.00	5.045		ug/L		101	67 - 130
Carbon tetrachloride	5.00	5.091		ug/L		102	64 - 141
Chlorobenzene	5.00	5.213		ug/L		104	80 - 120
Chloroethane	5.00	4.967		ug/L		99	63 - 120
Chloroform	5.00	5.462		ug/L		109	80 - 120
Chloromethane	5.00	4.846		ug/L		97	56 - 124
cis-1,2-Dichloroethene	5.00	5.428		ug/L		109	80 - 122
cis-1,3-Dichloropropene	5.00	5.091		ug/L		102	67 - 121
Dibromochloromethane	5.00	5.467		ug/L		109	64 - 138
Ethylbenzene	5.00	5.060		ug/L		101	80 - 120
Freon 113	5.00	4.542		ug/L		91	75 - 133
m&p-Xylene	10.0	10.28		ug/L		103	80 - 120
Methylene Chloride	5.00	5.104		ug/L		102	80 - 120
o-Xylene	5.00	4.979		ug/L		100	80 - 120
Styrene	5.00	5.094		ug/L		102	80 - 120
Tetrachloroethene	5.00	4.963		ug/L		99	80 - 120
Toluene	5.00	5.139		ug/L		103	80 - 120
trans-1,2-Dichloroethene	5.00	5.137		ug/L		103	80 - 122
trans-1,3-Dichloropropene	5.00	5.086		ug/L		102	61 - 129
Trichloroethene	5.00	5.200		ug/L		104	80 - 120
Trichlorofluoromethane	5.00	5.357		ug/L		107	62 - 136
Vinyl chloride	5.00	4.879		ug/L		98	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

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

Lab Sample ID: LCS 410-33649/7
Matrix: Water
Analysis Batch: 33649

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	13.08		ug/L		105	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-33649/6
Matrix: Water
Analysis Batch: 33649

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	5.104		ug/L		102	78 - 126	1	30
1,1,2,2-Tetrachloroethane			5.00	5.429		ug/L		109	75 - 123	1	30
1,1,2-Trichloroethane			5.00	5.502		ug/L		110	80 - 120	2	30
1,1-Dichloroethane			5.00	5.376		ug/L		108	74 - 120	1	30
1,1-Dichloroethene			5.00	5.139		ug/L		103	80 - 131	0	30
1,2-Dichloroethane			5.00	5.670		ug/L		113	69 - 122	0	30
1,2-Dichloropropane			5.00	5.428		ug/L		109	80 - 120	2	30
2-Butanone			37.5	40.02		ug/L		107	59 - 141	8	30
2-Hexanone			25.0	25.63		ug/L		103	52 - 140	4	30
4-Methyl-2-pentanone			25.0	24.57		ug/L		98	55 - 140	5	30
Acetone			37.5	34.35		ug/L		92	60 - 146	3	30
Benzene			5.00	5.120		ug/L		102	80 - 120	1	30
Bromodichloromethane			5.00	5.416		ug/L		108	73 - 124	1	30
Bromoform			5.00	5.302		ug/L		106	49 - 144	0	30
Bromomethane			5.00	4.806		ug/L		96	60 - 136	3	30
Carbon disulfide			5.00	4.972		ug/L		99	67 - 130	1	30
Carbon tetrachloride			5.00	5.028		ug/L		101	64 - 141	1	30
Chlorobenzene			5.00	5.165		ug/L		103	80 - 120	1	30
Chloroethane			5.00	4.886		ug/L		98	63 - 120	2	30
Chloroform			5.00	5.375		ug/L		107	80 - 120	2	30
Chloromethane			5.00	4.633		ug/L		93	56 - 124	4	30
cis-1,2-Dichloroethene			5.00	5.312		ug/L		106	80 - 122	2	30
cis-1,3-Dichloropropene			5.00	5.055		ug/L		101	67 - 121	1	30
Dibromochloromethane			5.00	5.409		ug/L		108	64 - 138	1	30
Ethylbenzene			5.00	5.002		ug/L		100	80 - 120	1	30
Freon 113			5.00	4.496		ug/L		90	75 - 133	1	30
m&p-Xylene			10.0	10.20		ug/L		102	80 - 120	1	30
Methylene Chloride			5.00	5.086		ug/L		102	80 - 120	0	30
o-Xylene			5.00	4.971		ug/L		99	80 - 120	0	30
Styrene			5.00	5.000		ug/L		100	80 - 120	2	30
Tetrachloroethene			5.00	4.969		ug/L		99	80 - 120	0	30
Toluene			5.00	5.053		ug/L		101	80 - 120	2	30
trans-1,2-Dichloroethene			5.00	5.118		ug/L		102	80 - 122	0	30
trans-1,3-Dichloropropene			5.00	5.008		ug/L		100	61 - 129	2	30
Trichloroethene			5.00	5.233		ug/L		105	80 - 120	1	30

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

Lab Sample ID: LCSD 410-33649/6
Matrix: Water
Analysis Batch: 33649

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	5.169		ug/L		103	62 - 136	4	30
Vinyl chloride			5.00	4.705		ug/L		94	60 - 125	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-33649/8
Matrix: Water
Analysis Batch: 33649

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	12.72		ug/L		102	38 - 145	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: MB 410-33898/10
Matrix: Water
Analysis Batch: 33898

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			08/17/20 12:18	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/17/20 12:18	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/17/20 12:18	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/17/20 12:18	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 12:18	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/17/20 12:18	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/17/20 12:18	1
2-Butanone	5.00	U	5.00		ug/L			08/17/20 12:18	1
2-Hexanone	5.00	U	5.00		ug/L			08/17/20 12:18	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/17/20 12:18	1
Acetone	5.00	U	5.00		ug/L			08/17/20 12:18	1
Benzene	0.200	U	0.200		ug/L			08/17/20 12:18	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/17/20 12:18	1
Bromoform	1.00	U	1.00		ug/L			08/17/20 12:18	1
Bromomethane	0.500	U	0.500		ug/L			08/17/20 12:18	1
Carbon disulfide	0.500	U	0.500		ug/L			08/17/20 12:18	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/17/20 12:18	1
Chlorobenzene	0.500	U	0.500		ug/L			08/17/20 12:18	1
Chloroethane	0.500	U	0.500		ug/L			08/17/20 12:18	1
Chloroform	0.200	U	0.200		ug/L			08/17/20 12:18	1
Chloromethane	0.500	U	0.500		ug/L			08/17/20 12:18	1

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

Lab Sample ID: MB 410-33898/10
Matrix: Water
Analysis Batch: 33898

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			08/17/20 12:18	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 12:18	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/17/20 12:18	1
Ethylbenzene	0.500	U	0.500		ug/L			08/17/20 12:18	1
Freon 113	0.500	U	0.500		ug/L			08/17/20 12:18	1
m&p-Xylene	0.500	U	0.500		ug/L			08/17/20 12:18	1
Methylene Chloride	0.500	U	0.500		ug/L			08/17/20 12:18	1
o-Xylene	0.500	U	0.500		ug/L			08/17/20 12:18	1
Styrene	0.500	U	0.500		ug/L			08/17/20 12:18	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/17/20 12:18	1
Toluene	0.200	U	0.200		ug/L			08/17/20 12:18	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 12:18	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 12:18	1
Trichloroethene	0.200	U	0.200		ug/L			08/17/20 12:18	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/17/20 12:18	1
Vinyl acetate	0.500	U	0.500		ug/L			08/17/20 12:18	1
Vinyl chloride	0.200	U	0.200		ug/L			08/17/20 12:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/17/20 12:18*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/17/20 12:18*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*08/17/20 12:18*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*08/17/20 12:18*	*1*

Lab Sample ID: LCS 410-33898/5
Matrix: Water
Analysis Batch: 33898

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	5.160		ug/L		103	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.236		ug/L		105	75 - 123
1,1,2-Trichloroethane	5.00	5.366		ug/L		107	80 - 120
1,1-Dichloroethane	5.00	5.700		ug/L		114	74 - 120
1,1-Dichloroethene	5.00	5.301		ug/L		106	80 - 131
1,2-Dichloroethane	5.00	5.324		ug/L		106	69 - 122
1,2-Dichloropropane	5.00	5.543		ug/L		111	80 - 120
2-Butanone	37.5	38.86		ug/L		104	59 - 141
2-Hexanone	25.0	27.76		ug/L		111	52 - 140
4-Methyl-2-pentanone	25.0	26.47		ug/L		106	55 - 140
Acetone	37.5	35.78		ug/L		95	60 - 146
Benzene	5.00	5.351		ug/L		107	80 - 120
Bromodichloromethane	5.00	4.915		ug/L		98	73 - 124
Bromoform	5.00	3.780		ug/L		76	49 - 144
Bromomethane	5.00	4.521		ug/L		90	60 - 136
Carbon disulfide	5.00	2.863	*	ug/L		57	67 - 130
Carbon tetrachloride	5.00	4.823		ug/L		96	64 - 141
Chlorobenzene	5.00	5.289		ug/L		106	80 - 120
Chloroethane	5.00	4.541		ug/L		91	63 - 120

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

Lab Sample ID: LCS 410-33898/5
Matrix: Water
Analysis Batch: 33898

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	5.536		ug/L		111	80 - 120		
Chloromethane			5.00	4.748		ug/L		95	56 - 124		
cis-1,2-Dichloroethene			5.00	5.802		ug/L		116	80 - 122		
cis-1,3-Dichloropropene			5.00	5.261		ug/L		105	67 - 121		
Dibromochloromethane			5.00	4.271		ug/L		85	64 - 138		
Ethylbenzene			5.00	5.353		ug/L		107	80 - 120		
Freon 113			5.00	4.701		ug/L		94	75 - 133		
m&p-Xylene			10.0	10.76		ug/L		108	80 - 120		
Methylene Chloride			5.00	5.491		ug/L		110	80 - 120		
o-Xylene			5.00	5.164		ug/L		103	80 - 120		
Styrene			5.00	5.461		ug/L		109	80 - 120		
Tetrachloroethene			5.00	5.172		ug/L		103	80 - 120		
Toluene			5.00	5.412		ug/L		108	80 - 120		
trans-1,2-Dichloroethene			5.00	5.311		ug/L		106	80 - 122		
trans-1,3-Dichloropropene			5.00	4.966		ug/L		99	61 - 129		
Trichloroethene			5.00	5.239		ug/L		105	80 - 120		
Trichlorofluoromethane			5.00	5.049		ug/L		101	62 - 136		
Vinyl chloride			5.00	4.484		ug/L		90	60 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: LCS 410-33898/7
Matrix: Water
Analysis Batch: 33898

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	13.05		ug/L		104	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*108*		*80 - 120*
Toluene-d8 (Surr)	*106*		*80 - 120*

Lab Sample ID: LCSD 410-33898/6
Matrix: Water
Analysis Batch: 33898

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	5.006		ug/L		100	78 - 126	3	30
1,1,2,2-Tetrachloroethane			5.00	5.426		ug/L		109	75 - 123	4	30
1,1,2-Trichloroethane			5.00	5.313		ug/L		106	80 - 120	1	30
1,1-Dichloroethane			5.00	5.524		ug/L		110	74 - 120	3	30
1,1-Dichloroethene			5.00	5.230		ug/L		105	80 - 131	1	30

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

Lab Sample ID: LCSD 410-33898/6
Matrix: Water
Analysis Batch: 33898

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	5.194		ug/L		104	69 - 122	2	30
1,2-Dichloropropane			5.00	5.620		ug/L		112	80 - 120	1	30
2-Butanone			37.5	37.81		ug/L		101	59 - 141	3	30
2-Hexanone			25.0	26.61		ug/L		106	52 - 140	4	30
4-Methyl-2-pentanone			25.0	25.76		ug/L		103	55 - 140	3	30
Acetone			37.5	36.06		ug/L		96	60 - 146	1	30
Benzene			5.00	5.384		ug/L		108	80 - 120	1	30
Bromodichloromethane			5.00	4.843		ug/L		97	73 - 124	1	30
Bromoform			5.00	3.906		ug/L		78	49 - 144	3	30
Bromomethane			5.00	4.463		ug/L		89	60 - 136	1	30
Carbon disulfide			5.00	2.870	*	ug/L		57	67 - 130	0	30
Carbon tetrachloride			5.00	4.834		ug/L		97	64 - 141	0	30
Chlorobenzene			5.00	5.250		ug/L		105	80 - 120	1	30
Chloroethane			5.00	4.573		ug/L		91	63 - 120	1	30
Chloroform			5.00	5.411		ug/L		108	80 - 120	2	30
Chloromethane			5.00	4.581		ug/L		92	56 - 124	4	30
cis-1,2-Dichloroethene			5.00	5.651		ug/L		113	80 - 122	3	30
cis-1,3-Dichloropropene			5.00	5.152		ug/L		103	67 - 121	2	30
Dibromochloromethane			5.00	4.417		ug/L		88	64 - 138	3	30
Ethylbenzene			5.00	5.316		ug/L		106	80 - 120	1	30
Freon 113			5.00	4.680		ug/L		94	75 - 133	0	30
m&p-Xylene			10.0	10.38		ug/L		104	80 - 120	4	30
Methylene Chloride			5.00	5.401		ug/L		108	80 - 120	2	30
o-Xylene			5.00	5.238		ug/L		105	80 - 120	1	30
Styrene			5.00	5.470		ug/L		109	80 - 120	0	30
Tetrachloroethene			5.00	5.259		ug/L		105	80 - 120	2	30
Toluene			5.00	5.308		ug/L		106	80 - 120	2	30
trans-1,2-Dichloroethene			5.00	5.277		ug/L		106	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	4.838		ug/L		97	61 - 129	3	30
Trichloroethene			5.00	5.288		ug/L		106	80 - 120	1	30
Trichlorofluoromethane			5.00	4.867		ug/L		97	62 - 136	4	30
Vinyl chloride			5.00	4.351		ug/L		87	60 - 125	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 410-33898/8
Matrix: Water
Analysis Batch: 33898

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	12.92		ug/L		103	38 - 145	1	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 410-33898/8
Matrix: Water
Analysis Batch: 33898

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

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Dibromofluoromethane (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: MB 410-34120/10
Matrix: Water
Analysis Batch: 34120

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			08/17/20 21:33	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/17/20 21:33	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/17/20 21:33	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/17/20 21:33	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/17/20 21:33	1
2-Butanone	5.00	U	5.00		ug/L			08/17/20 21:33	1
2-Hexanone	5.00	U	5.00		ug/L			08/17/20 21:33	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/17/20 21:33	1
Acetone	5.00	U	5.00		ug/L			08/17/20 21:33	1
Benzene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Bromoform	1.00	U	1.00		ug/L			08/17/20 21:33	1
Bromomethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Carbon disulfide	0.500	U	0.500		ug/L			08/17/20 21:33	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/17/20 21:33	1
Chlorobenzene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Chloroethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Chloroform	0.200	U	0.200		ug/L			08/17/20 21:33	1
Chloromethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Ethylbenzene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Freon 113	0.500	U	0.500		ug/L			08/17/20 21:33	1
m&p-Xylene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Methylene Chloride	0.500	U	0.500		ug/L			08/17/20 21:33	1
o-Xylene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Styrene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Toluene	0.200	U	0.200		ug/L			08/17/20 21:33	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Trichloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Vinyl acetate	0.500	U	0.500		ug/L			08/17/20 21:33	1
Vinyl chloride	0.200	U	0.200		ug/L			08/17/20 21:33	1

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

Lab Sample ID: MB 410-34120/10
Matrix: Water
Analysis Batch: 34120

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/17/20 21:33*	*1*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*08/17/20 21:33*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*08/17/20 21:33*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/17/20 21:33*	*1*

Lab Sample ID: LCS 410-34120/5
Matrix: Water
Analysis Batch: 34120

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	5.347		ug/L		107	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.512		ug/L		110	75 - 123
1,1,2-Trichloroethane	5.00	5.625		ug/L		112	80 - 120
1,1-Dichloroethane	5.00	5.569		ug/L		111	74 - 120
1,1-Dichloroethene	5.00	5.421		ug/L		108	80 - 131
1,2-Dichloroethane	5.00	5.844		ug/L		117	69 - 122
1,2-Dichloropropane	5.00	5.666		ug/L		113	80 - 120
2-Butanone	37.5	34.18		ug/L		91	59 - 141
2-Hexanone	25.0	22.08		ug/L		88	52 - 140
4-Methyl-2-pentanone	25.0	21.51		ug/L		86	55 - 140
Acetone	37.5	32.78		ug/L		87	60 - 146
Benzene	5.00	5.314		ug/L		106	80 - 120
Bromodichloromethane	5.00	5.754		ug/L		115	73 - 124
Bromoform	5.00	5.422		ug/L		108	49 - 144
Bromomethane	5.00	4.964		ug/L		99	60 - 136
Carbon disulfide	5.00	5.310		ug/L		106	67 - 130
Carbon tetrachloride	5.00	5.352		ug/L		107	64 - 141
Chlorobenzene	5.00	5.250		ug/L		105	80 - 120
Chloroethane	5.00	5.125		ug/L		103	63 - 120
Chloroform	5.00	5.630		ug/L		113	80 - 120
Chloromethane	5.00	5.005		ug/L		100	56 - 124
cis-1,2-Dichloroethene	5.00	5.561		ug/L		111	80 - 122
cis-1,3-Dichloropropene	5.00	5.218		ug/L		104	67 - 121
Dibromochloromethane	5.00	5.501		ug/L		110	64 - 138
Ethylbenzene	5.00	5.130		ug/L		103	80 - 120
Freon 113	5.00	5.000		ug/L		100	75 - 133
m&p-Xylene	10.0	10.34		ug/L		103	80 - 120
Methylene Chloride	5.00	5.353		ug/L		107	80 - 120
o-Xylene	5.00	4.966		ug/L		99	80 - 120
Styrene	5.00	5.169		ug/L		103	80 - 120
Tetrachloroethene	5.00	5.113		ug/L		102	80 - 120
Toluene	5.00	5.129		ug/L		103	80 - 120
trans-1,2-Dichloroethene	5.00	5.252		ug/L		105	80 - 122
trans-1,3-Dichloropropene	5.00	5.119		ug/L		102	61 - 129
Trichloroethene	5.00	5.321		ug/L		106	80 - 120
Trichlorofluoromethane	5.00	5.730		ug/L		115	62 - 136
Vinyl chloride	5.00	5.066		ug/L		101	60 - 125

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

Lab Sample ID: LCS 410-34120/5
Matrix: Water
Analysis Batch: 34120

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 410-34120/7
Matrix: Water
Analysis Batch: 34120

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	12.49		ug/L		100	38 - 145		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-34120/6
Matrix: Water
Analysis Batch: 34120

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	5.362		ug/L		107	78 - 126	0	30
1,1,2,2-Tetrachloroethane			5.00	5.511		ug/L		110	75 - 123	0	30
1,1,2-Trichloroethane			5.00	5.602		ug/L		112	80 - 120	0	30
1,1-Dichloroethane			5.00	5.556		ug/L		111	74 - 120	0	30
1,1-Dichloroethene			5.00	5.395		ug/L		108	80 - 131	0	30
1,2-Dichloroethane			5.00	5.746		ug/L		115	69 - 122	2	30
1,2-Dichloropropane			5.00	5.585		ug/L		112	80 - 120	1	30
2-Butanone			37.5	34.15		ug/L		91	59 - 141	0	30
2-Hexanone			25.0	22.09		ug/L		88	52 - 140	0	30
4-Methyl-2-pentanone			25.0	21.28		ug/L		85	55 - 140	1	30
Acetone			37.5	31.14		ug/L		83	60 - 146	5	30
Benzene			5.00	5.200		ug/L		104	80 - 120	2	30
Bromodichloromethane			5.00	5.492		ug/L		110	73 - 124	5	30
Bromoform			5.00	5.355		ug/L		107	49 - 144	1	30
Bromomethane			5.00	4.905		ug/L		98	60 - 136	1	30
Carbon disulfide			5.00	5.198		ug/L		104	67 - 130	2	30
Carbon tetrachloride			5.00	5.266		ug/L		105	64 - 141	2	30
Chlorobenzene			5.00	5.126		ug/L		103	80 - 120	2	30
Chloroethane			5.00	5.060		ug/L		101	63 - 120	1	30
Chloroform			5.00	5.516		ug/L		110	80 - 120	2	30
Chloromethane			5.00	4.873		ug/L		97	56 - 124	3	30
cis-1,2-Dichloroethene			5.00	5.546		ug/L		111	80 - 122	0	30
cis-1,3-Dichloropropene			5.00	5.165		ug/L		103	67 - 121	1	30
Dibromochloromethane			5.00	5.400		ug/L		108	64 - 138	2	30
Ethylbenzene			5.00	5.047		ug/L		101	80 - 120	2	30

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

Lab Sample ID: LCSD 410-34120/6
Matrix: Water
Analysis Batch: 34120

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
Freon 113			5.00	5.036		ug/L		101	75 - 133	1	30
m&p-Xylene			10.0	10.15		ug/L		101	80 - 120	2	30
Methylene Chloride			5.00	5.299		ug/L		106	80 - 120	1	30
o-Xylene			5.00	4.969		ug/L		99	80 - 120	0	30
Styrene			5.00	5.116		ug/L		102	80 - 120	1	30
Tetrachloroethene			5.00	5.048		ug/L		101	80 - 120	1	30
Toluene			5.00	5.160		ug/L		103	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	5.207		ug/L		104	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	5.076		ug/L		102	61 - 129	1	30
Trichloroethene			5.00	5.212		ug/L		104	80 - 120	2	30
Trichlorofluoromethane			5.00	5.668		ug/L		113	62 - 136	1	30
Vinyl chloride			5.00	5.045		ug/L		101	60 - 125	0	30

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

Lab Sample ID: LCSD 410-34120/8
Matrix: Water
Analysis Batch: 34120

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	12.34		ug/L		99	38 - 145	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-32243/1-A
Matrix: Water
Analysis Batch: 32255

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32243

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 09:26	1
Ethane (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 09:26	1
Ethene (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 09:26	1
Methane (1C)	5.00	U	5.00		ug/L		08/12/20 08:02	08/12/20 09:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*102*		*28 - 140*	*08/12/20 08:02*	*08/12/20 09:26*	*1*

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 410-32243/2-A
Matrix: Water
Analysis Batch: 32255

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32243

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acetylene (1C)			51.2	56.69		ug/L		111	57 - 146		
Ethane (1C)			59.4	61.49		ug/L		104	85 - 115		
Ethene (1C)			60.4	64.16		ug/L		106	83 - 115		
Methane (1C)			59.4	66.83		ug/L		113	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*106*		*28 - 140*

Lab Sample ID: LCSD 410-32243/3-A
Matrix: Water
Analysis Batch: 32255

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 32243

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetylene (1C)			51.2	54.31		ug/L		106	57 - 146	4	20
Ethane (1C)			59.4	61.67		ug/L		104	85 - 115	0	20
Ethene (1C)			60.4	64.38		ug/L		107	83 - 115	0	20
Methane (1C)			59.4	66.87		ug/L		113	85 - 115	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*104*		*28 - 140*

Lab Sample ID: MB 410-33217/1-A
Matrix: Water
Analysis Batch: 33222

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33217

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/14/20 08:58	08/14/20 16:37	1
Ethane (1C)	5.00	U	5.00		ug/L		08/14/20 08:58	08/14/20 16:37	1
Ethene (1C)	5.00	U	5.00		ug/L		08/14/20 08:58	08/14/20 16:37	1
Methane (1C)	5.00	U	5.00		ug/L		08/14/20 08:58	08/14/20 16:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*96*		*28 - 140*	*08/14/20 08:58*	*08/14/20 16:37*	*1*

Lab Sample ID: LCS 410-33217/2-A
Matrix: Water
Analysis Batch: 33222

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33217

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acetylene (1C)			51.2	48.50		ug/L		95	57 - 146		
Ethane (1C)			59.4	54.80		ug/L		92	85 - 115		
Ethene (1C)			60.4	57.05		ug/L		95	83 - 115		
Methane (1C)			59.4	58.47		ug/L		98	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*92*		*28 - 140*

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 410-33217/3-A
Matrix: Water
Analysis Batch: 33222

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 33217

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetylene (1C)			51.2	49.76		ug/L		97	57 - 146	3	20
Ethane (1C)			59.4	55.29		ug/L		93	85 - 115	1	20
Ethene (1C)			60.4	57.31		ug/L		95	83 - 115	0	20
Methane (1C)			59.4	58.53		ug/L		99	85 - 115	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*97*		*28 - 140*

Lab Sample ID: MB 410-34365/1-A
Matrix: Water
Analysis Batch: 34380

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 34365

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/18/20 08:32	08/18/20 09:38	1
Ethane (1C)	5.00	U	5.00		ug/L		08/18/20 08:32	08/18/20 09:38	1
Ethene (1C)	5.00	U	5.00		ug/L		08/18/20 08:32	08/18/20 09:38	1
Methane (1C)	5.00	U	5.00		ug/L		08/18/20 08:32	08/18/20 09:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*105*		*28 - 140*	*08/18/20 08:32*	*08/18/20 09:38*	*1*

Lab Sample ID: LCS 410-34365/2-A
Matrix: Water
Analysis Batch: 34380

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 34365

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetylene (1C)			51.2	61.24		ug/L		120	57 - 146
Ethane (1C)			59.4	61.60		ug/L		104	85 - 115
Ethene (1C)			60.4	63.14		ug/L		105	83 - 115
Methane (1C)			59.4	65.01		ug/L		109	85 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*104*		*28 - 140*

Lab Sample ID: LCSD 410-34365/3-A
Matrix: Water
Analysis Batch: 34380

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 34365

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetylene (1C)			51.2	54.66		ug/L		107	57 - 146	11	20
Ethane (1C)			59.4	59.66		ug/L		100	85 - 115	3	20
Ethene (1C)			60.4	61.60		ug/L		102	83 - 115	2	20
Methane (1C)			59.4	62.83		ug/L		106	85 - 115	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*104*		*28 - 140*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-31945/4
Matrix: Water
Analysis Batch: 31945

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	<0.10		0.10	0.050	mg/L			08/11/20 16:33	1

Lab Sample ID: LCS 410-31945/3
Matrix: Water
Analysis Batch: 31945

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.772		mg/L		103	90 - 110		

Lab Sample ID: 410-10260-1 MS
Matrix: Water
Analysis Batch: 31945

Client Sample ID: BOP-16i-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate	0.500	U F1	2.50	2.78	F1	mg/L		111	90 - 110		

Lab Sample ID: 410-10260-1 DU
Matrix: Water
Analysis Batch: 31945

Client Sample ID: BOP-16i-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Nitrogen, Nitrate	0.500	U F1		<0.50		mg/L				NC	15

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-31944/4
Matrix: Water
Analysis Batch: 31944

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			08/11/20 16:33	1

Lab Sample ID: LCS 410-31944/3
Matrix: Water
Analysis Batch: 31944

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	8.045		mg/L		107	90 - 110		

Lab Sample ID: 410-10260-1 MS
Matrix: Water
Analysis Batch: 31944

Client Sample ID: BOP-16i-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	5.00	U F1	25.0	32.21	F1	mg/L		117	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 410-10260-1 DU
Matrix: Water
Analysis Batch: 31944

Client Sample ID: BOP-16i-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Sulfate	5.00	U F1		5.00	U	mg/L				2	15

Lab Sample ID: MB 410-32557/4
Matrix: Water
Analysis Batch: 32557

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.0		1.0	0.30	mg/L			08/13/20 07:08	1

Lab Sample ID: LCS 410-32557/3
Matrix: Water
Analysis Batch: 32557

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.44		mg/L		99	90 - 110		

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 410-32161/1-A
Matrix: Water
Analysis Batch: 33104

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32161

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.206	U	0.206		mg/L		08/12/20 04:38	08/13/20 20:44	1

Lab Sample ID: LCS 410-32161/2-A
Matrix: Water
Analysis Batch: 33104

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32161

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			0.402	0.4199		mg/L		104	80 - 120		

Lab Sample ID: MB 410-32144/1-A
Matrix: Water
Analysis Batch: 32585

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 32144

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.200	U	0.200		mg/L		08/12/20 02:43	08/12/20 16:57	1

Lab Sample ID: LCS 410-32144/2-A
Matrix: Water
Analysis Batch: 32585

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 32144

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			0.402	0.4238		mg/L		105	80 - 120		

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10260-1

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-34844/5
Matrix: Water
Analysis Batch: 34844

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			08/18/20 15:19	1

Lab Sample ID: LCS 410-34844/4
Matrix: Water
Analysis Batch: 34844

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	24.18		mg/L		97	91 - 113		

Lab Sample ID: MB 410-35283/5
Matrix: Water
Analysis Batch: 35283

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			08/19/20 15:48	1

Lab Sample ID: LCS 410-35283/4
Matrix: Water
Analysis Batch: 35283

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	25.50		mg/L		102	91 - 113		

GC/MS VOA

Analysis Batch: 33649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-1	BOP-16i-0820	Total/NA	Water	8260C LL	
410-10260-2	E-7-0820	Total/NA	Water	8260C LL	
410-10260-2 - DL	E-7-0820	Total/NA	Water	8260C LL	
410-10260-3	E-6-0820	Total/NA	Water	8260C LL	
410-10260-3 - DL	E-6-0820	Total/NA	Water	8260C LL	
410-10260-4	BOP-10i-0820	Total/NA	Water	8260C LL	
410-10260-4 - DL	BOP-10i-0820	Total/NA	Water	8260C LL	
MB 410-33649/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-33649/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-33649/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-33649/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-33649/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Analysis Batch: 33898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-5	BOP-07i-0820	Total/NA	Water	8260C LL	
410-10260-5 - DL	BOP-07i-0820	Total/NA	Water	8260C LL	
410-10260-6	BOP-W-0820	Total/NA	Water	8260C LL	
410-10260-6 - DL	BOP-W-0820	Total/NA	Water	8260C LL	
410-10260-7	BOP-09i-0820	Total/NA	Water	8260C LL	
410-10260-7 - DL	BOP-09i-0820	Total/NA	Water	8260C LL	
410-10260-8	Trip Blanks	Total/NA	Water	8260C LL	
MB 410-33898/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-33898/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-33898/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-33898/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-33898/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Analysis Batch: 34120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-2 - DL2	E-7-0820	Total/NA	Water	8260C LL	
MB 410-34120/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-34120/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-34120/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-34120/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-34120/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

GC VOA

Prep Batch: 32243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-1	BOP-16i-0820	Total/NA	Water	RSK-175	
410-10260-2	E-7-0820	Total/NA	Water	RSK-175	
410-10260-3	E-6-0820	Total/NA	Water	RSK-175	
410-10260-4	BOP-10i-0820	Total/NA	Water	RSK-175	
410-10260-5	BOP-07i-0820	Total/NA	Water	RSK-175	
410-10260-7	BOP-09i-0820	Total/NA	Water	RSK-175	
MB 410-32243/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-32243/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-32243/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

GC VOA

Analysis Batch: 32255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-1	BOP-16i-0820	Total/NA	Water	RSK-175	32243
410-10260-2	E-7-0820	Total/NA	Water	RSK-175	32243
410-10260-3	E-6-0820	Total/NA	Water	RSK-175	32243
410-10260-4	BOP-10i-0820	Total/NA	Water	RSK-175	32243
410-10260-5	BOP-07i-0820	Total/NA	Water	RSK-175	32243
410-10260-7	BOP-09i-0820	Total/NA	Water	RSK-175	32243
MB 410-32243/1-A	Method Blank	Total/NA	Water	RSK-175	32243
LCS 410-32243/2-A	Lab Control Sample	Total/NA	Water	RSK-175	32243
LCSD 410-32243/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	32243

Prep Batch: 33217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-1 - DL	BOP-16i-0820	Total/NA	Water	RSK-175	
410-10260-2 - DL	E-7-0820	Total/NA	Water	RSK-175	
410-10260-3 - DL	E-6-0820	Total/NA	Water	RSK-175	
410-10260-4 - DL	BOP-10i-0820	Total/NA	Water	RSK-175	
410-10260-7 - DL	BOP-09i-0820	Total/NA	Water	RSK-175	
MB 410-33217/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-33217/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-33217/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 33222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-1 - DL	BOP-16i-0820	Total/NA	Water	RSK-175	33217
410-10260-2 - DL	E-7-0820	Total/NA	Water	RSK-175	33217
410-10260-3 - DL	E-6-0820	Total/NA	Water	RSK-175	33217
410-10260-4 - DL	BOP-10i-0820	Total/NA	Water	RSK-175	33217
410-10260-7 - DL	BOP-09i-0820	Total/NA	Water	RSK-175	33217
MB 410-33217/1-A	Method Blank	Total/NA	Water	RSK-175	33217
LCS 410-33217/2-A	Lab Control Sample	Total/NA	Water	RSK-175	33217
LCSD 410-33217/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	33217

Prep Batch: 34365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-2 - RA	E-7-0820	Total/NA	Water	RSK-175	
MB 410-34365/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-34365/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-34365/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 34380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-2 - RA	E-7-0820	Total/NA	Water	RSK-175	34365
MB 410-34365/1-A	Method Blank	Total/NA	Water	RSK-175	34365
LCS 410-34365/2-A	Lab Control Sample	Total/NA	Water	RSK-175	34365
LCSD 410-34365/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	34365

HPLC/IC

Analysis Batch: 31944

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-1	BOP-16i-0820	Total/NA	Water	EPA 300.0 R2.1	

HPLC/IC (Continued)

Analysis Batch: 31944 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-3	E-6-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10260-4	BOP-10i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10260-7	BOP-09i-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-31944/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-31944/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-10260-1 MS	BOP-16i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10260-1 DU	BOP-16i-0820	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 31945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-1	BOP-16i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10260-5	BOP-07i-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-31945/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-31945/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-10260-1 MS	BOP-16i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10260-1 DU	BOP-16i-0820	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 32557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-2	E-7-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10260-5	BOP-07i-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-32557/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-32557/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 32144

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-1	BOP-16i-0820	Total Recoverable	Water	3005A	
MB 410-32144/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-32144/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 32161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-1	BOP-16i-0820	Dissolved	Water	Non-Digest Prep	
MB 410-32161/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-32161/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Analysis Batch: 32585

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-1	BOP-16i-0820	Total Recoverable	Water	6010D	32144
MB 410-32144/1-A	Method Blank	Total Recoverable	Water	6010D	32144
LCS 410-32144/2-A	Lab Control Sample	Total Recoverable	Water	6010D	32144

Analysis Batch: 33104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-1	BOP-16i-0820	Dissolved	Water	6010D	32161
MB 410-32161/1-A	Method Blank	Total/NA	Water	6010D	32161
LCS 410-32161/2-A	Lab Control Sample	Total/NA	Water	6010D	32161

QC Association Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10260-1

General Chemistry

Analysis Batch: 34844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-1	BOP-16i-0820	Total/NA	Water	5310C-2011	
410-10260-3	E-6-0820	Total/NA	Water	5310C-2011	
410-10260-4	BOP-10i-0820	Total/NA	Water	5310C-2011	
410-10260-5	BOP-07i-0820	Total/NA	Water	5310C-2011	
410-10260-7	BOP-09i-0820	Total/NA	Water	5310C-2011	
MB 410-34844/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-34844/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Analysis Batch: 35283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10260-2	E-7-0820	Total/NA	Water	5310C-2011	
MB 410-35283/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-35283/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10260-1

Client Sample ID: BOP-16i-0820

Lab Sample ID: 410-10260-1

Date Collected: 08/10/20 10:05
Matrix: Water
Date Received: 08/11/20 11:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33649	08/16/20 16:45	R64Z	ELLE
Total/NA	Prep	RSK-175			32243	08/12/20 08:02	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	32255	08/12/20 11:17	IYN5	ELLE
Total/NA	Prep	RSK-175	DL		33217	08/14/20 08:58	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	20	33222	08/14/20 20:52	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	31944	08/11/20 16:50	WHJ3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	31945	08/11/20 16:50	WHJ3	ELLE
Dissolved	Prep	Non-Digest Prep			32161	08/12/20 04:38	UJL8	ELLE
Dissolved	Analysis	6010D		1	33104	08/13/20 21:13	LR7D	ELLE
Total Recoverable	Prep	3005A			32144	08/12/20 02:43	UJL8	ELLE
Total Recoverable	Analysis	6010D		1	32585	08/12/20 18:08	UCIG	ELLE
Total/NA	Analysis	5310C-2011		1	34844	08/18/20 16:40	KGQ6	ELLE

Client Sample ID: E-7-0820

Lab Sample ID: 410-10260-2

Date Collected: 08/10/20 11:38
Matrix: Water
Date Received: 08/11/20 11:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33649	08/16/20 17:07	R64Z	ELLE
Total/NA	Analysis	8260C LL	DL	10	33649	08/16/20 17:28	R64Z	ELLE
Total/NA	Analysis	8260C LL	DL2	100	34120	08/17/20 23:48	MJ8R	ELLE
Total/NA	Prep	RSK-175			32243	08/12/20 08:02	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	32255	08/12/20 12:15	IYN5	ELLE
Total/NA	Prep	RSK-175	RA		34365	08/18/20 08:32	IYN5	ELLE
Total/NA	Analysis	RSK-175	RA	1	34380	08/18/20 10:34	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		33217	08/14/20 08:58	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	100	33222	08/14/20 21:10	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		500	32557	08/13/20 08:17	IGI3	ELLE
Total/NA	Analysis	5310C-2011		500	35283	08/19/20 16:42	KGQ6	ELLE

Client Sample ID: E-6-0820

Lab Sample ID: 410-10260-3

Date Collected: 08/10/20 12:54
Matrix: Water
Date Received: 08/11/20 11:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33649	08/16/20 17:50	R64Z	ELLE
Total/NA	Analysis	8260C LL	DL	10	33649	08/16/20 18:12	R64Z	ELLE
Total/NA	Prep	RSK-175			32243	08/12/20 08:02	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	32255	08/12/20 12:34	IYN5	ELLE
Total/NA	Prep	RSK-175	DL		33217	08/14/20 08:58	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	20	33222	08/14/20 21:29	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	31944	08/11/20 17:56	WHJ3	ELLE
Total/NA	Analysis	5310C-2011		1	34844	08/18/20 17:07	KGQ6	ELLE

Client Sample ID: BOP-10i-0820

Lab Sample ID: 410-10260-4

Date Collected: 08/10/20 13:38

Matrix: Water

Date Received: 08/11/20 11:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33649	08/16/20 18:34	R64Z	ELLE
Total/NA	Analysis	8260C LL	DL	10	33649	08/16/20 18:55	R64Z	ELLE
Total/NA	Prep	RSK-175			32243	08/12/20 08:02	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	32255	08/12/20 12:53	IYN5	ELLE
Total/NA	Prep	RSK-175	DL		33217	08/14/20 08:58	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	100	33222	08/14/20 21:47	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		500	31944	08/11/20 18:13	WHJ3	ELLE
Total/NA	Analysis	5310C-2011		25	34844	08/18/20 17:47	KGQ6	ELLE

Client Sample ID: BOP-07i-0820

Lab Sample ID: 410-10260-5

Date Collected: 08/10/20 15:06

Matrix: Water

Date Received: 08/11/20 11:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33898	08/17/20 16:55	K4WN	ELLE
Total/NA	Analysis	8260C LL	DL	10	33898	08/17/20 17:16	K4WN	ELLE
Total/NA	Prep	RSK-175			32243	08/12/20 08:02	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	32255	08/12/20 13:12	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	31945	08/11/20 18:29	WHJ3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	32557	08/13/20 08:34	IGI3	ELLE
Total/NA	Analysis	5310C-2011		1	34844	08/18/20 18:00	KGQ6	ELLE

Client Sample ID: BOP-W-0820

Lab Sample ID: 410-10260-6

Date Collected: 08/10/20 14:10

Matrix: Water

Date Received: 08/11/20 11:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33898	08/17/20 17:37	K4WN	ELLE
Total/NA	Analysis	8260C LL	DL	10	33898	08/17/20 17:58	K4WN	ELLE

Client Sample ID: BOP-09i-0820

Lab Sample ID: 410-10260-7

Date Collected: 08/10/20 09:12

Matrix: Water

Date Received: 08/11/20 11:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		2	33898	08/17/20 18:20	K4WN	ELLE
Total/NA	Analysis	8260C LL	DL	20	33898	08/17/20 18:41	K4WN	ELLE
Total/NA	Prep	RSK-175			32243	08/12/20 08:02	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	32255	08/12/20 13:31	IYN5	ELLE
Total/NA	Prep	RSK-175	DL		33217	08/14/20 08:58	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	200	33222	08/14/20 22:05	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	31944	08/11/20 18:46	WHJ3	ELLE
Total/NA	Analysis	5310C-2011		10	34844	08/18/20 18:14	KGQ6	ELLE

Lab Chronicle

Client: Landau & Associates, Inc.
Job ID: 410-10260-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10260-8
Date Collected: 08/10/20 00:00
Matrix: Water
Date Received: 08/11/20 11:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	33898	08/17/20 16:34	K4WN	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: 410-10260-1
Project/Site: Boeing of Portland/0025116.120.412

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
5310C-2011		Water	Total Organic Carbon
6010D	3005A	Water	Iron
6010D	Non-Digest Prep	Water	Iron
8260C LL		Water	1,1,1-Trichloroethane
8260C LL		Water	1,1,2,2-Tetrachloroethane
8260C LL		Water	1,1,2-Trichloroethane
8260C LL		Water	1,1-Dichloroethane
8260C LL		Water	1,1-Dichloroethene
8260C LL		Water	1,2-Dichloroethane
8260C LL		Water	1,2-Dichloropropane
8260C LL		Water	2-Butanone
8260C LL		Water	2-Hexanone
8260C LL		Water	4-Methyl-2-pentanone
8260C LL		Water	Acetone
8260C LL		Water	Benzene
8260C LL		Water	Bromodichloromethane
8260C LL		Water	Bromoform
8260C LL		Water	Bromomethane
8260C LL		Water	Carbon disulfide
8260C LL		Water	Carbon tetrachloride
8260C LL		Water	Chlorobenzene
8260C LL		Water	Chloroethane
8260C LL		Water	Chloroform
8260C LL		Water	Chloromethane
8260C LL		Water	cis-1,2-Dichloroethene
8260C LL		Water	cis-1,3-Dichloropropene
8260C LL		Water	Dibromochloromethane
8260C LL		Water	Ethylbenzene
8260C LL		Water	Freon 113
8260C LL		Water	m&p-Xylene
8260C LL		Water	Methylene Chloride
8260C LL		Water	o-Xylene
8260C LL		Water	Styrene
8260C LL		Water	Tetrachloroethene
8260C LL		Water	Toluene
8260C LL		Water	trans-1,2-Dichloroethene
8260C LL		Water	trans-1,3-Dichloropropene
8260C LL		Water	Trichloroethene
8260C LL		Water	Trichlorofluoromethane
8260C LL		Water	Vinyl acetate
8260C LL		Water	Vinyl chloride
EPA 300.0 R2.1		Water	Nitrogen, Nitrate
EPA 300.0 R2.1		Water	Sulfate
RSK-175	RSK-175	Water	Ethane (1C)
RSK-175	RSK-175	Water	Ethene (1C)

Accreditation/Certification Summary

Client: Landau & Associates, Inc.
Job ID: 410-10260-1
Project/Site: Boeing of Portland/0025116.120.412

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-21
RSK-175	RSK-175	Water	Methane (1C)

Method Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10260-1

Method	Method Description	Protocol	Laboratory
8260C LL	Volatile Organic Compounds by GC/MS	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010D	Metals (ICP)	SW846	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

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.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10260-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-10260-1	BOP-16i-0820	Water	08/10/20 10:05	08/11/20 11:09	
410-10260-2	E-7-0820	Water	08/10/20 11:38	08/11/20 11:09	
410-10260-3	E-6-0820	Water	08/10/20 12:54	08/11/20 11:09	
410-10260-4	BOP-10i-0820	Water	08/10/20 13:38	08/11/20 11:09	
410-10260-5	BOP-07i-0820	Water	08/10/20 15:06	08/11/20 11:09	
410-10260-6	BOP-W-0820	Water	08/10/20 14:10	08/11/20 11:09	
410-10260-7	BOP-09i-0820	Water	08/10/20 09:12	08/11/20 11:09	
410-10260-8	Trip Blanks	Water	08/10/20 00:00	08/11/20 11:09	

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-10260 Chain of Custody

nental use only

spond.

1 Client Information

Site Location: ~~Boeing of Portland~~ Gresham, Oregon
Site Project: Boeing of Portland
Site Program/#: 0027116.120.417
Boeing PM: Debbie Taege
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: [X] Boeing EHS [ ] Other (specify): _____
Sampler: WHL/GJN # of Coolers: 1

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	4 Analyses Requested: VOC (38 List)	TOC	Sulfate	Nitrate	AMEE	Total Iron	Dissolved Iron					5 Remarks/Comments
~~BOP-09:-0820~~	~~08/10/20~~	~~0912~~	~~H2O~~	9	X	X	~~X~~	~~X~~	~~X~~	—	—	GJN				
BOP-16:-0820	08/10/20	1007	H2O	11	X	X	X	X	X	X	X					
E-7-0820	08/10/20	1138	H2O	9	X	X	X		X							
E-6-0820	08/10/20	1254	H2O	9	X	X	X		X							
BOP-10:-0820	08/10/20	1338	H2O	9	X	X	X		X							
BOP-07:-0820	08/10/20	1506	H2O	9	X	X	X	X	X							
BOP-W-0820	08/10/20	1410	H2O	3	X											
BOP-09:-0820	08/10/20	0912	H2O	9	X	X	X		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 7
W. Ramos Lopez	8/10/20 16:30	—	
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time 8/11/2020 11:04

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

Temperature upon Receipt: 25 °C

Custody Seals Intact?: Yes No

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

7063 0913

JR

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: 410-10260-1

Login Number: 10260
List Number: 1
Creator: Rivera-Santa, Julissa

List Source: Eurofins Lancaster Laboratories Env

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	

eurofins | Environment Testing America



ANALYTICAL REPORT

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

Laboratory Job ID: 410-10429-1
Client Project/Site: Boeing of Portland/0025116.120.412

For:
Landau & Associates, Inc.
Sound View Plaza, 130 2nd Ave S
Edmonds, Washington 98020-9129

Attn: Chris Kimmel

Barb Weyandt

Authorized for release by:
9/11/2020 5:30:54 PM
Barbara Weyandt, Project Manager
(717)556-7264
barbaraweyandt@eurofinsus.com

Designee for

Kay Hower, Principal Project Manager
(717)556-7364
kayhower@eurofinsus.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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 recoveries that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result.

* 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 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. 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 LANACASTER 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. 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.

Barb Weyandt

Barbara Weyandt
Project Manager
9/11/2020 5:30:54 PM

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Detection Summary 6
Client Sample Results 7
Surrogate Summary 13
QC Sample Results 14
QC Association Summary 20
Lab Chronicle 22
Certification Summary 23
Method Summary 24
Sample Summary 25
Chain of Custody 26
Receipt Checklists 27

Definitions/Glossary

Client: Landau & Associates, Inc. Job ID: 410-10429-1
Project/Site: Boeing of Portland/0025116.120.412

Qualifiers

GC/MS VOA

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

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate recovery exceeds control limits

HPLC/IC

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

General Chemistry

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: 410-10429-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-10429-1

Receipt
The samples were received on 8/12/2020 11:15 AM; the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

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

GC Semi VOA
Method NWTPH_Dx: Surrogate recovery for the following sample was outside of acceptance limits: LAI-4-0820 (410-10429-1). There was insufficient sample to perform a re-extraction; therefore, the data have been reported.

Method NWTPH_Dx: The following sample contained a petroleum product which is most similar to our reference standard for motor oil: LAI-4-0820 (410-10429-1). The sample pattern does not match our reference standard for Diesel/#2 Fuel.

Method NWTPH_Dx: The following sample contained a petroleum product which is most similar to our reference standard for motor oil: LAI-7-0820 (410-10429-2). The sample pattern does not match our reference standard for Diesel/#2 Fuel.

Method NWTPH_Dx: The following sample contained a petroleum product which is most similar to our reference standard for motor oil: LAI-8-0820 (410-10429-3). The sample pattern does not match our reference standard for Diesel/#2 Fuel.

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

HPLC/IC
Method 300_ORGFM_28D: The continuing calibration blank (CCB) for analytical batch 410-32850 contained Sulfate above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

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

General Chemistry
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/0025116.120.412

Job ID: 410-10429-1

Client Sample ID: LAI-4-0820 — Lab Sample ID: 410-10429-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	0.497		0.200		ug/L	1		8260C LL	Total/NA
C12-C24	1.08		0.0543		mg/L	1		NWTPH-Dx	Total/NA
Diesel	1.37		0.0543		mg/L	1		NWTPH-Dx	Total/NA
C16-C36	2.83		0.136		mg/L	1		NWTPH-Dx	Total/NA
Nitrogen, Nitrate	1.87		0.500		mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	10.9		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
HEM (Oil & Grease)	9.5		6.0		mg/L	1		1664A	Total/NA
SGT-HEM (TPH)	6.1		6.0		mg/L	1		1664A	Total/NA

Client Sample ID: LAI-7-0820 — Lab Sample ID: 410-10429-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	3.57		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	2.15		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	5.57		0.200		ug/L	1		8260C LL	Total/NA
C12-C24	0.0957		0.0535		mg/L	1		NWTPH-Dx	Total/NA
Diesel	0.122		0.0535		mg/L	1		NWTPH-Dx	Total/NA
C16-C36	0.256		0.134		mg/L	1		NWTPH-Dx	Total/NA
Nitrogen, Nitrate	3.99		0.500		mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	14.2		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: LAI-8-0820 — Lab Sample ID: 410-10429-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	9.10		5.00		ug/L	1		8260C LL	Total/NA
2-Hexanone	9.46		5.00		ug/L	1		8260C LL	Total/NA
4-Methyl-2-pentanone	5.59		5.00		ug/L	1		8260C LL	Total/NA
Acetone	33.1		5.00		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	18.7		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	0.258		0.200		ug/L	1		8260C LL	Total/NA
trans-1,2-Dichloroethene	0.217		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	2.16		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.691		0.200		ug/L	1		8260C LL	Total/NA
C12-C24	75.6		2.70		mg/L	50		NWTPH-Dx	Total/NA
Diesel	96.4		2.70		mg/L	50		NWTPH-Dx	Total/NA
C16-C36	88.0		6.74		mg/L	50		NWTPH-Dx	Total/NA
Total Organic Carbon	81.8		10.0		mg/L	10		5310C-2011	Total/NA

Client Sample ID: Trip Blanks — Lab Sample ID: 410-10429-4

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: LAI-4-0820

Date Collected: 08/11/20 14:15
Date Received: 08/12/20 11:15

Lab Sample ID: 410-10429-1

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			08/18/20 01:58	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/18/20 01:58	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/18/20 01:58	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/18/20 01:58	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/18/20 01:58	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/18/20 01:58	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/18/20 01:58	1
2-Butanone	5.00	U	5.00		ug/L			08/18/20 01:58	1
2-Hexanone	5.00	U	5.00		ug/L			08/18/20 01:58	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/18/20 01:58	1
Acetone	5.00	U	5.00		ug/L			08/18/20 01:58	1
Benzene	0.200	U	0.200		ug/L			08/18/20 01:58	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/18/20 01:58	1
Bromoform	1.00	U	1.00		ug/L			08/18/20 01:58	1
Bromomethane	0.500	U	0.500		ug/L			08/18/20 01:58	1
Carbon disulfide	0.500	U	0.500		ug/L			08/18/20 01:58	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/18/20 01:58	1
Chlorobenzene	0.500	U	0.500		ug/L			08/18/20 01:58	1
Chloroethane	0.500	U	0.500		ug/L			08/18/20 01:58	1
Chloroform	0.200	U	0.200		ug/L			08/18/20 01:58	1
Chloromethane	0.500	U	0.500		ug/L			08/18/20 01:58	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/18/20 01:58	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/18/20 01:58	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/18/20 01:58	1
Ethylbenzene	0.500	U	0.500		ug/L			08/18/20 01:58	1
Freon 113	0.500	U	0.500		ug/L			08/18/20 01:58	1
m&p-Xylene	0.500	U	0.500		ug/L			08/18/20 01:58	1
Methylene Chloride	0.500	U	0.500		ug/L			08/18/20 01:58	1
o-Xylene	0.500	U	0.500		ug/L			08/18/20 01:58	1
Styrene	0.500	U	0.500		ug/L			08/18/20 01:58	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/18/20 01:58	1
Toluene	0.200	U	0.200		ug/L			08/18/20 01:58	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/18/20 01:58	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/18/20 01:58	1
Trichloroethene	**0.497**		0.200		ug/L			08/18/20 01:58	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/18/20 01:58	1
Vinyl acetate	0.500	U	0.500		ug/L			08/18/20 01:58	1
Vinyl chloride	0.200	U	0.200		ug/L			08/18/20 01:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*08/18/20 01:58*	*1*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*08/18/20 01:58*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/18/20 01:58*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/18/20 01:58*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	**1.08**		0.0543		mg/L		08/21/20 21:08	08/26/20 07:28	1
Diesel	**1.37**		0.0543		mg/L		08/21/20 21:08	08/26/20 07:28	1
C16-C36	**2.83**		0.136		mg/L		08/21/20 21:08	08/26/20 07:28	1

Client Sample ID: LAI-4-0820

Date Collected: 08/11/20 14:15
Date Received: 08/12/20 11:15

Lab Sample ID: 410-10429-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*42*	*X*	*50 - 150*	*08/21/20 21:08*	*08/26/20 07:28*	*1*
Chlorobenzene (Surr)	*53*		*50 - 150*	*08/21/20 21:08*	*08/26/20 07:28*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**1.87**		0.500		mg/L			08/13/20 13:40	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**10.9**		5.00		mg/L			08/13/20 13:40	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	**9.5**		6.0		mg/L			08/17/20 16:24	1
SGT-HEM (TPH)	**6.1**		6.0		mg/L			08/17/20 16:24	1

Client Sample ID: LAI-7-0820

Date Collected: 08/11/20 13:40
Date Received: 08/12/20 11:15

Lab Sample ID: 410-10429-2

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			08/18/20 02:20	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/18/20 02:20	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/18/20 02:20	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/18/20 02:20	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/18/20 02:20	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/18/20 02:20	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/18/20 02:20	1
2-Butanone	5.00	U	5.00		ug/L			08/18/20 02:20	1
2-Hexanone	5.00	U	5.00		ug/L			08/18/20 02:20	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/18/20 02:20	1
Acetone	5.00	U	5.00		ug/L			08/18/20 02:20	1
Benzene	0.200	U	0.200		ug/L			08/18/20 02:20	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/18/20 02:20	1
Bromoform	1.00	U	1.00		ug/L			08/18/20 02:20	1
Bromomethane	0.500	U	0.500		ug/L			08/18/20 02:20	1
Carbon disulfide	0.500	U	0.500		ug/L			08/18/20 02:20	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/18/20 02:20	1
Chlorobenzene	0.500	U	0.500		ug/L			08/18/20 02:20	1
Chloroethane	0.500	U	0.500		ug/L			08/18/20 02:20	1
Chloroform	0.200	U	0.200		ug/L			08/18/20 02:20	1
Chloromethane	0.500	U	0.500		ug/L			08/18/20 02:20	1
cis-1,2-Dichloroethene	**3.57**		0.200		ug/L			08/18/20 02:20	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/18/20 02:20	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/18/20 02:20	1
Ethylbenzene	0.500	U	0.500		ug/L			08/18/20 02:20	1
Freon 113	0.500	U	0.500		ug/L			08/18/20 02:20	1
m&p-Xylene	0.500	U	0.500		ug/L			08/18/20 02:20	1
Methylene Chloride	0.500	U	0.500		ug/L			08/18/20 02:20	1
o-Xylene	0.500	U	0.500		ug/L			08/18/20 02:20	1

Client Sample ID: LAI-7-0820

Date Collected: 08/11/20 13:40
Date Received: 08/12/20 11:15

Lab Sample ID: 410-10429-2

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.500	U	0.500		ug/L			08/18/20 02:20	1
Tetrachloroethene	**2.15**		0.200		ug/L			08/18/20 02:20	1
Toluene	0.200	U	0.200		ug/L			08/18/20 02:20	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/18/20 02:20	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/18/20 02:20	1
Trichloroethene	**5.57**		0.200		ug/L			08/18/20 02:20	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/18/20 02:20	1
Vinyl acetate	0.500	U	0.500		ug/L			08/18/20 02:20	1
Vinyl chloride	0.200	U	0.200		ug/L			08/18/20 02:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/18/20 02:20*	*1*
Dibromofluoromethane (Surr)	*111*		*80 - 120*		*08/18/20 02:20*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*08/18/20 02:20*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/18/20 02:20*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	**0.0957**		0.0535		mg/L		08/21/20 21:08	08/26/20 08:16	1
Diesel	**0.122**		0.0535		mg/L		08/21/20 21:08	08/26/20 08:16	1
C16-C36	**0.256**		0.134		mg/L		08/21/20 21:08	08/26/20 08:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*96*		*50 - 150*	*08/21/20 21:08*	*08/26/20 08:16*	*1*
Chlorobenzene (Surr)	*85*		*50 - 150*	*08/21/20 21:08*	*08/26/20 08:16*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**3.99**		0.500		mg/L			08/13/20 13:57	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**14.2**		5.00		mg/L			08/13/20 13:57	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	6.1	U	6.1		mg/L			08/17/20 16:24	1
SGT-HEM (TPH)	6.1	U	6.1		mg/L			08/17/20 16:24	1

Client Sample ID: LAI-8-0820

Date Collected: 08/11/20 13:12
Date Received: 08/12/20 11:15

Lab Sample ID: 410-10429-3

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			08/18/20 04:30	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/18/20 04:30	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/18/20 04:30	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/18/20 04:30	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/18/20 04:30	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/18/20 04:30	1

Client Sample ID: LAI-8-0820

Date Collected: 08/11/20 13:12
Date Received: 08/12/20 11:15

Lab Sample ID: 410-10429-3

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/18/20 04:30	1
2-Butanone	**9.10**		5.00		ug/L			08/18/20 04:30	1
2-Hexanone	**9.46**		5.00		ug/L			08/18/20 04:30	1
4-Methyl-2-pentanone	**5.59**		5.00		ug/L			08/18/20 04:30	1
Acetone	**33.1**		5.00		ug/L			08/18/20 04:30	1
Benzene	0.200	U	0.200		ug/L			08/18/20 04:30	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/18/20 04:30	1
Bromoform	1.00	U	1.00		ug/L			08/18/20 04:30	1
Bromomethane	0.500	U	0.500		ug/L			08/18/20 04:30	1
Carbon disulfide	0.500	U	0.500		ug/L			08/18/20 04:30	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/18/20 04:30	1
Chlorobenzene	0.500	U	0.500		ug/L			08/18/20 04:30	1
Chloroethane	0.500	U	0.500		ug/L			08/18/20 04:30	1
Chloroform	0.200	U	0.200		ug/L			08/18/20 04:30	1
Chloromethane	0.500	U	0.500		ug/L			08/18/20 04:30	1
cis-1,2-Dichloroethene	**18.7**		0.200		ug/L			08/18/20 04:30	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/18/20 04:30	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/18/20 04:30	1
Ethylbenzene	0.500	U	0.500		ug/L			08/18/20 04:30	1
Freon 113	0.500	U	0.500		ug/L			08/18/20 04:30	1
m&p-Xylene	0.500	U	0.500		ug/L			08/18/20 04:30	1
Methylene Chloride	0.500	U	0.500		ug/L			08/18/20 04:30	1
o-Xylene	0.500	U	0.500		ug/L			08/18/20 04:30	1
Styrene	0.500	U	0.500		ug/L			08/18/20 04:30	1
Tetrachloroethene	**0.258**		0.200		ug/L			08/18/20 04:30	1
Toluene	0.200	U	0.200		ug/L			08/18/20 04:30	1
trans-1,2-Dichloroethene	**0.217**		0.200		ug/L			08/18/20 04:30	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/18/20 04:30	1
Trichloroethene	**2.16**		0.200		ug/L			08/18/20 04:30	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/18/20 04:30	1
Vinyl acetate	0.500	U	0.500		ug/L			08/18/20 04:30	1
Vinyl chloride	**0.691**		0.200		ug/L			08/18/20 04:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/18/20 04:30*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*08/18/20 04:30*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*08/18/20 04:30*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/18/20 04:30*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	**75.6**		2.70		mg/L		08/21/20 21:08	08/26/20 09:52	50
Diesel	**96.4**		2.70		mg/L		08/21/20 21:08	08/26/20 09:52	50
C16-C36	**88.0**		6.74		mg/L		08/21/20 21:08	08/26/20 09:52	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*398*	*X*	*50 - 150*	*08/21/20 21:08*	*08/26/20 09:52*	*50*
Chlorobenzene (Surr)	*4*	*X*	*50 - 150*	*08/21/20 21:08*	*08/26/20 09:52*	*50*

Client Sample ID: LAI-8-0820

Lab Sample ID: 410-10429-3

Date Collected: 08/11/20 13:12

Matrix: Water

Date Received: 08/12/20 11:15

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.500	U	0.500		mg/L			08/13/20 14:13	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.00	U	5.00		mg/L			08/13/20 14:13	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	81.8		10.0		mg/L			08/18/20 19:35	10

Client Sample ID: Trip Blanks

Lab Sample ID: 410-10429-4

Date Collected: 08/11/20 00:00

Matrix: Water

Date Received: 08/12/20 11:15

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			08/17/20 22:43	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/17/20 22:43	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/17/20 22:43	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/17/20 22:43	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 22:43	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/17/20 22:43	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/17/20 22:43	1
2-Butanone	5.00	U	5.00		ug/L			08/17/20 22:43	1
2-Hexanone	5.00	U	5.00		ug/L			08/17/20 22:43	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/17/20 22:43	1
Acetone	5.00	U	5.00		ug/L			08/17/20 22:43	1
Benzene	0.200	U	0.200		ug/L			08/17/20 22:43	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/17/20 22:43	1
Bromoform	1.00	U	1.00		ug/L			08/17/20 22:43	1
Bromomethane	0.500	U	0.500		ug/L			08/17/20 22:43	1
Carbon disulfide	0.500	U	0.500		ug/L			08/17/20 22:43	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/17/20 22:43	1
Chlorobenzene	0.500	U	0.500		ug/L			08/17/20 22:43	1
Chloroethane	0.500	U	0.500		ug/L			08/17/20 22:43	1
Chloroform	0.200	U	0.200		ug/L			08/17/20 22:43	1
Chloromethane	0.500	U	0.500		ug/L			08/17/20 22:43	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 22:43	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 22:43	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/17/20 22:43	1
Ethylbenzene	0.500	U	0.500		ug/L			08/17/20 22:43	1
Freon 113	0.500	U	0.500		ug/L			08/17/20 22:43	1
m&p-Xylene	0.500	U	0.500		ug/L			08/17/20 22:43	1
Methylene Chloride	0.500	U	0.500		ug/L			08/17/20 22:43	1
o-Xylene	0.500	U	0.500		ug/L			08/17/20 22:43	1
Styrene	0.500	U	0.500		ug/L			08/17/20 22:43	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/17/20 22:43	1
Toluene	0.200	U	0.200		ug/L			08/17/20 22:43	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 22:43	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 22:43	1

Client: Landau & Associates, Inc.
Job ID: 410-10429-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10429-4
Date Collected: 08/11/20 00:00
Matrix: Water
Date Received: 08/12/20 11:15

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	0.200	U	0.200		ug/L			08/17/20 22:43	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/17/20 22:43	1
Vinyl acetate	0.500	U	0.500		ug/L			08/17/20 22:43	1
Vinyl chloride	0.200	U	0.200		ug/L			08/17/20 22:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*08/17/20 22:43*	*1*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*08/17/20 22:43*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/17/20 22:43*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/17/20 22:43*	*1*

Surrogate Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10429-1

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)
410-10429-1	LAI-4-0820	106	109	95	98
410-10429-2	LAI-7-0820	107	111	96	98
410-10429-3	LAI-8-0820	107	108	98	97
410-10429-4	Trip Blanks	106	109	95	98
LCS 410-34120/5	Lab Control Sample	104	106	99	100
LCS 410-34120/7	Lab Control Sample	107	106	100	100
LCSD 410-34120/6	Lab Control Sample Dup	104	104	99	99
LCSD 410-34120/8	Lab Control Sample Dup	104	106	100	99
MB 410-34120/10	Method Blank	107	109	97	99

Surrogate Legend

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

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		OTP	CBNZ
Lab Sample ID	Client Sample ID	(50-150)	(50-150)
410-10429-1	LAI-4-0820	42 X	53
410-10429-2	LAI-7-0820	96	85
410-10429-3	LAI-8-0820	398 X	4 X
LCS 410-36051/2-B	Lab Control Sample	94	72
LCSD 410-36051/3-B	Lab Control Sample Dup	93	70
MB 410-36051/1-B	Method Blank	91	71

Surrogate Legend

OTP = o- terphenyl (Surr)
CBNZ = Chlorobenzene (Surr)

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10429-1

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

Lab Sample ID: MB 410-34120/10
Matrix: Water
Analysis Batch: 34120

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			08/17/20 21:33	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/17/20 21:33	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/17/20 21:33	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/17/20 21:33	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/17/20 21:33	1
2-Butanone	5.00	U	5.00		ug/L			08/17/20 21:33	1
2-Hexanone	5.00	U	5.00		ug/L			08/17/20 21:33	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/17/20 21:33	1
Acetone	5.00	U	5.00		ug/L			08/17/20 21:33	1
Benzene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Bromoform	1.00	U	1.00		ug/L			08/17/20 21:33	1
Bromomethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Carbon disulfide	0.500	U	0.500		ug/L			08/17/20 21:33	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/17/20 21:33	1
Chlorobenzene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Chloroethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Chloroform	0.200	U	0.200		ug/L			08/17/20 21:33	1
Chloromethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Ethylbenzene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Freon 113	0.500	U	0.500		ug/L			08/17/20 21:33	1
m&p-Xylene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Methylene Chloride	0.500	U	0.500		ug/L			08/17/20 21:33	1
o-Xylene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Styrene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Toluene	0.200	U	0.200		ug/L			08/17/20 21:33	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Trichloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Vinyl acetate	0.500	U	0.500		ug/L			08/17/20 21:33	1
Vinyl chloride	0.200	U	0.200		ug/L			08/17/20 21:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/17/20 21:33*	*1*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*08/17/20 21:33*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*08/17/20 21:33*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/17/20 21:33*	*1*

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

Lab Sample ID: LCS 410-34120/5
Matrix: Water
Analysis Batch: 34120

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	5.347		ug/L		107	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.512		ug/L		110	75 - 123
1,1,2-Trichloroethane	5.00	5.625		ug/L		112	80 - 120
1,1-Dichloroethane	5.00	5.569		ug/L		111	74 - 120
1,1-Dichloroethene	5.00	5.421		ug/L		108	80 - 131
1,2-Dichloroethane	5.00	5.844		ug/L		117	69 - 122
1,2-Dichloropropane	5.00	5.666		ug/L		113	80 - 120
2-Butanone	37.5	34.18		ug/L		91	59 - 141
2-Hexanone	25.0	22.08		ug/L		88	52 - 140
4-Methyl-2-pentanone	25.0	21.51		ug/L		86	55 - 140
Acetone	37.5	32.78		ug/L		87	60 - 146
Benzene	5.00	5.314		ug/L		106	80 - 120
Bromodichloromethane	5.00	5.754		ug/L		115	73 - 124
Bromoform	5.00	5.422		ug/L		108	49 - 144
Bromomethane	5.00	4.964		ug/L		99	60 - 136
Carbon disulfide	5.00	5.310		ug/L		106	67 - 130
Carbon tetrachloride	5.00	5.352		ug/L		107	64 - 141
Chlorobenzene	5.00	5.250		ug/L		105	80 - 120
Chloroethane	5.00	5.125		ug/L		103	63 - 120
Chloroform	5.00	5.630		ug/L		113	80 - 120
Chloromethane	5.00	5.005		ug/L		100	56 - 124
cis-1,2-Dichloroethene	5.00	5.561		ug/L		111	80 - 122
cis-1,3-Dichloropropene	5.00	5.218		ug/L		104	67 - 121
Dibromochloromethane	5.00	5.501		ug/L		110	64 - 138
Ethylbenzene	5.00	5.130		ug/L		103	80 - 120
Freon 113	5.00	5.000		ug/L		100	75 - 133
m&p-Xylene	10.0	10.34		ug/L		103	80 - 120
Methylene Chloride	5.00	5.353		ug/L		107	80 - 120
o-Xylene	5.00	4.966		ug/L		99	80 - 120
Styrene	5.00	5.169		ug/L		103	80 - 120
Tetrachloroethene	5.00	5.113		ug/L		102	80 - 120
Toluene	5.00	5.129		ug/L		103	80 - 120
trans-1,2-Dichloroethene	5.00	5.252		ug/L		105	80 - 122
trans-1,3-Dichloropropene	5.00	5.119		ug/L		102	61 - 129
Trichloroethene	5.00	5.321		ug/L		106	80 - 120
Trichlorofluoromethane	5.00	5.730		ug/L		115	62 - 136
Vinyl chloride	5.00	5.066		ug/L		101	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

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

Lab Sample ID: LCS 410-34120/7
Matrix: Water
Analysis Batch: 34120

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	12.49		ug/L		100	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-34120/6
Matrix: Water
Analysis Batch: 34120

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	5.362		ug/L		107	78 - 126	0	30
1,1,2,2-Tetrachloroethane			5.00	5.511		ug/L		110	75 - 123	0	30
1,1,2-Trichloroethane			5.00	5.602		ug/L		112	80 - 120	0	30
1,1-Dichloroethane			5.00	5.556		ug/L		111	74 - 120	0	30
1,1-Dichloroethene			5.00	5.395		ug/L		108	80 - 131	0	30
1,2-Dichloroethane			5.00	5.746		ug/L		115	69 - 122	2	30
1,2-Dichloropropane			5.00	5.585		ug/L		112	80 - 120	1	30
2-Butanone			37.5	34.15		ug/L		91	59 - 141	0	30
2-Hexanone			25.0	22.09		ug/L		88	52 - 140	0	30
4-Methyl-2-pentanone			25.0	21.28		ug/L		85	55 - 140	1	30
Acetone			37.5	31.14		ug/L		83	60 - 146	5	30
Benzene			5.00	5.200		ug/L		104	80 - 120	2	30
Bromodichloromethane			5.00	5.492		ug/L		110	73 - 124	5	30
Bromoform			5.00	5.355		ug/L		107	49 - 144	1	30
Bromomethane			5.00	4.905		ug/L		98	60 - 136	1	30
Carbon disulfide			5.00	5.198		ug/L		104	67 - 130	2	30
Carbon tetrachloride			5.00	5.266		ug/L		105	64 - 141	2	30
Chlorobenzene			5.00	5.126		ug/L		103	80 - 120	2	30
Chloroethane			5.00	5.060		ug/L		101	63 - 120	1	30
Chloroform			5.00	5.516		ug/L		110	80 - 120	2	30
Chloromethane			5.00	4.873		ug/L		97	56 - 124	3	30
cis-1,2-Dichloroethene			5.00	5.546		ug/L		111	80 - 122	0	30
cis-1,3-Dichloropropene			5.00	5.165		ug/L		103	67 - 121	1	30
Dibromochloromethane			5.00	5.400		ug/L		108	64 - 138	2	30
Ethylbenzene			5.00	5.047		ug/L		101	80 - 120	2	30
Freon 113			5.00	5.036		ug/L		101	75 - 133	1	30
m&p-Xylene			10.0	10.15		ug/L		101	80 - 120	2	30
Methylene Chloride			5.00	5.299		ug/L		106	80 - 120	1	30
o-Xylene			5.00	4.969		ug/L		99	80 - 120	0	30
Styrene			5.00	5.116		ug/L		102	80 - 120	1	30
Tetrachloroethene			5.00	5.048		ug/L		101	80 - 120	1	30
Toluene			5.00	5.160		ug/L		103	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	5.207		ug/L		104	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	5.076		ug/L		102	61 - 129	1	30
Trichloroethene			5.00	5.212		ug/L		104	80 - 120	2	30

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

Lab Sample ID: LCSD 410-34120/6
Matrix: Water
Analysis Batch: 34120

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	5.668		ug/L		113	62 - 136	1	30
Vinyl chloride			5.00	5.045		ug/L		101	60 - 125	0	30

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

Lab Sample ID: LCSD 410-34120/8
Matrix: Water
Analysis Batch: 34120

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	12.34		ug/L		99	38 - 145	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 410-36051/1-B
Matrix: Water
Analysis Batch: 37202

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36051

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	0.0500	U	0.0500		mg/L		08/21/20 21:08	08/26/20 05:03	1
Diesel	0.0500	U	0.0500		mg/L		08/21/20 21:08	08/26/20 05:03	1
C16-C36	0.125	U	0.125		mg/L		08/21/20 21:08	08/26/20 05:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*91*		*50 - 150*	*08/21/20 21:08*	*08/26/20 05:03*	*1*
Chlorobenzene (Surr)	*71*		*50 - 150*	*08/21/20 21:08*	*08/26/20 05:03*	*1*

Lab Sample ID: LCS 410-36051/2-B
Matrix: Water
Analysis Batch: 37202

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36051

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel			0.800	0.6927		mg/L		87			

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o- terphenyl (Surr)	*94*		*50 - 150*
Chlorobenzene (Surr)	*72*		*50 - 150*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 410-36051/3-B
Matrix: Water
Analysis Batch: 37202

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 36051

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel			0.800	0.6863		mg/L		86		1	

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o- terphenyl (Surr)	*93*		*50 - 150*
Chlorobenzene (Surr)	*70*		*50 - 150*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-32851/15
Matrix: Water
Analysis Batch: 32851

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U	0.100		mg/L			08/13/20 15:20	1

Lab Sample ID: LCS 410-32851/14
Matrix: Water
Analysis Batch: 32851

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.6829		mg/L		91	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-32850/15
Matrix: Water
Analysis Batch: 32850

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			08/13/20 15:20	1

Lab Sample ID: LCS 410-32850/14
Matrix: Water
Analysis Batch: 32850

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.225		mg/L		96	90 - 110		

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 410-34081/1
Matrix: Water
Analysis Batch: 34081

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	5.0	U	5.0		mg/L			08/17/20 16:24	1
SGT-HEM (TPH)	5.0	U	5.0		mg/L			08/17/20 16:24	1

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 410-34081/2
Matrix: Water
Analysis Batch: 34081

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM (Oil & Grease)	40.0	36.70		mg/L		92	78 - 114
SGT-HEM (TPH)	20.0	17.00		mg/L		85	64 - 132

Lab Sample ID: LCSD 410-34081/3
Matrix: Water
Analysis Batch: 34081

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
HEM (Oil & Grease)	40.0	33.10		mg/L		83	78 - 114	10	13
SGT-HEM (TPH)	20.0	16.50		mg/L		82	64 - 132	3	23

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-34844/5
Matrix: Water
Analysis Batch: 34844

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			08/18/20 15:19	1

Lab Sample ID: LCS 410-34844/4
Matrix: Water
Analysis Batch: 34844

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	24.18		mg/L		97	91 - 113

GC/MS VOA

Analysis Batch: 34120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10429-1	LAI-4-0820	Total/NA	Water	8260C LL	
410-10429-2	LAI-7-0820	Total/NA	Water	8260C LL	
410-10429-3	LAI-8-0820	Total/NA	Water	8260C LL	
410-10429-4	Trip Blanks	Total/NA	Water	8260C LL	
MB 410-34120/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-34120/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-34120/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-34120/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-34120/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

GC Semi VOA

Prep Batch: 36051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10429-1	LAI-4-0820	Total/NA	Water	3510C	
410-10429-2	LAI-7-0820	Total/NA	Water	3510C	
410-10429-3	LAI-8-0820	Total/NA	Water	3510C	
MB 410-36051/1-B	Method Blank	Total/NA	Water	3510C	
LCS 410-36051/2-B	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-36051/3-B	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 37202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10429-1	LAI-4-0820	Total/NA	Water	NWTPH-Dx	38013
410-10429-2	LAI-7-0820	Total/NA	Water	NWTPH-Dx	38013
410-10429-3	LAI-8-0820	Total/NA	Water	NWTPH-Dx	38013
MB 410-36051/1-B	Method Blank	Total/NA	Water	NWTPH-Dx	38013
LCS 410-36051/2-B	Lab Control Sample	Total/NA	Water	NWTPH-Dx	38013
LCSD 410-36051/3-B	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	38013

Cleanup Batch: 38013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10429-1	LAI-4-0820	Total/NA	Water	3630C	36051
410-10429-2	LAI-7-0820	Total/NA	Water	3630C	36051
410-10429-3	LAI-8-0820	Total/NA	Water	3630C	36051
MB 410-36051/1-B	Method Blank	Total/NA	Water	3630C	36051
LCS 410-36051/2-B	Lab Control Sample	Total/NA	Water	3630C	36051
LCSD 410-36051/3-B	Lab Control Sample Dup	Total/NA	Water	3630C	36051

HPLC/IC

Analysis Batch: 32850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10429-1	LAI-4-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10429-2	LAI-7-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10429-3	LAI-8-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-32850/15	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-32850/14	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 32851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10429-1	LAI-4-0820	Total/NA	Water	EPA 300.0 R2.1	

QC Association Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10429-1

HPLC/IC (Continued)

Analysis Batch: 32851 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10429-2	LAI-7-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10429-3	LAI-8-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-32851/15	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-32851/14	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

General Chemistry

Analysis Batch: 34081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10429-1	LAI-4-0820	Total/NA	Water	1664A	
410-10429-2	LAI-7-0820	Total/NA	Water	1664A	
MB 410-34081/1	Method Blank	Total/NA	Water	1664A	
LCS 410-34081/2	Lab Control Sample	Total/NA	Water	1664A	
LCSD 410-34081/3	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 34844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10429-3	LAI-8-0820	Total/NA	Water	5310C-2011	
MB 410-34844/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-34844/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Lab Chronicle

Client: Landau & Associates, Inc.
Job ID: 410-10429-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: LAI-4-0820
Lab Sample ID: 410-10429-1
Date Collected: 08/11/20 14:15
Matrix: Water
Date Received: 08/12/20 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	34120	08/18/20 01:58	MJ8R	ELLE
Total/NA	Prep	3510C			36051	08/21/20 21:08	K2IL	ELLE
Total/NA	Cleanup	3630C			38013	08/22/20 02:25	K2IL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	37202	08/26/20 07:28	UHEW	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	32850	08/13/20 13:40	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	32851	08/13/20 13:40	GJ35	ELLE
Total/NA	Analysis	1664A		1	34081	08/17/20 16:24	QT6L	ELLE

Client Sample ID: LAI-7-0820
Lab Sample ID: 410-10429-2
Date Collected: 08/11/20 13:40
Matrix: Water
Date Received: 08/12/20 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	34120	08/18/20 02:20	MJ8R	ELLE
Total/NA	Prep	3510C			36051	08/21/20 21:08	K2IL	ELLE
Total/NA	Cleanup	3630C			38013	08/22/20 02:25	K2IL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	37202	08/26/20 08:16	UHEW	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	32850	08/13/20 13:57	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	32851	08/13/20 13:57	GJ35	ELLE
Total/NA	Analysis	1664A		1	34081	08/17/20 16:24	QT6L	ELLE

Client Sample ID: LAI-8-0820
Lab Sample ID: 410-10429-3
Date Collected: 08/11/20 13:12
Matrix: Water
Date Received: 08/12/20 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	34120	08/18/20 04:30	MJ8R	ELLE
Total/NA	Prep	3510C			36051	08/21/20 21:08	K2IL	ELLE
Total/NA	Cleanup	3630C			38013	08/22/20 02:25	K2IL	ELLE
Total/NA	Analysis	NWTPH-Dx		50	37202	08/26/20 09:52	UHEW	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	32850	08/13/20 14:13	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	32851	08/13/20 14:13	GJ35	ELLE
Total/NA	Analysis	5310C-2011		10	34844	08/18/20 19:35	KGQ6	ELLE

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10429-4
Date Collected: 08/11/20 00:00
Matrix: Water
Date Received: 08/12/20 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	34120	08/17/20 22:43	MJ8R	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: 410-10429-1
Project/Site: Boeing of Portland/0025116.120.412

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
1664A		Water	SGT-HEM (TPH)
5310C-2011		Water	Total Organic Carbon
8260C LL		Water	1,1,1-Trichloroethane
8260C LL		Water	1,1,2,2-Tetrachloroethane
8260C LL		Water	1,1,2-Trichloroethane
8260C LL		Water	1,1-Dichloroethane
8260C LL		Water	1,1-Dichloroethene
8260C LL		Water	1,2-Dichloroethane
8260C LL		Water	1,2-Dichloropropane
8260C LL		Water	2-Butanone
8260C LL		Water	2-Hexanone
8260C LL		Water	4-Methyl-2-pentanone
8260C LL		Water	Acetone
8260C LL		Water	Benzene
8260C LL		Water	Bromodichloromethane
8260C LL		Water	Bromoform
8260C LL		Water	Bromomethane
8260C LL		Water	Carbon disulfide
8260C LL		Water	Carbon tetrachloride
8260C LL		Water	Chlorobenzene
8260C LL		Water	Chloroethane
8260C LL		Water	Chloroform
8260C LL		Water	Chloromethane
8260C LL		Water	cis-1,2-Dichloroethene
8260C LL		Water	cis-1,3-Dichloropropene
8260C LL		Water	Dibromochloromethane
8260C LL		Water	Ethylbenzene
8260C LL		Water	Freon 113
8260C LL		Water	m&p-Xylene
8260C LL		Water	Methylene Chloride
8260C LL		Water	o-Xylene
8260C LL		Water	Styrene
8260C LL		Water	Tetrachloroethene
8260C LL		Water	Toluene
8260C LL		Water	trans-1,2-Dichloroethene
8260C LL		Water	trans-1,3-Dichloropropene
8260C LL		Water	Trichloroethene
8260C LL		Water	Trichlorofluoromethane
8260C LL		Water	Vinyl acetate
8260C LL		Water	Vinyl chloride
EPA 300.0 R2.1		Water	Nitrogen, Nitrate
EPA 300.0 R2.1		Water	Sulfate
NWTPH-Dx	3510C	Water	C12-C24
NWTPH-Dx	3510C	Water	C16-C36
NWTPH-Dx	3510C	Water	Diesel

Method Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10429-1

Method	Method Description	Protocol	Laboratory
8260C LL	Volatile Organic Compounds by GC/MS	SW846	ELLE
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
1664A	HEM and SGT-HEM	1664A	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
3630C	Silica Gel Cleanup	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE

Protocol References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbon

SM = "Standard Methods For The Examination Of Water And Wastewater"

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.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10429-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-10429-1	LAI-4-0820	Water	08/11/20 14:15	08/12/20 11:15	
410-10429-2	LAI-7-0820	Water	08/11/20 13:40	08/12/20 11:15	
410-10429-3	LAI-8-0820	Water	08/11/20 13:12	08/12/20 11:15	
410-10429-4	Trip Blanks	Water	08/11/20 00:00	08/12/20 11:15	

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-10429 Chain of Custody

ıntal use only

ond.

1 Client Information

Site Location: Gresham, Oregon
Site Project: Boeing - Portland
Site Program/#: 025116.120.412
Boeing PM: Debbie Taege
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL/GJN # of Coolers: 1

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	4 Analyses Requested: VOC (38 list)	TPH-Dx	FOG	Sulfate	Nitrate	TOC							5 Remarks/Comments
LAI-4-0820	8/11/20	14:15	H2O	9	X	X	X	X	X								
LAI-7-0820	↓	13:40	↓	9	X	X	X	X	X								
LAI-8-0820	↓	13:12	↓	9	X	X		X	X	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
[signature]	8/11 16:45		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: [signature]	Date/Time 8/12/20 1115

Relinquished by commercial carrier (circle): UPS FedEx Other: 1

Temperature upon Receipt: 1.0 °C

Custody Seals Intact?: Yes No

7

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 410-10429-1

Login Number: 10429
List Number: 1
Creator: Colon Martinez, Jessenia C

List Source: Eurofins Lancaster Laboratories Env

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.	True	
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	

eurofins | Environment Testing America



ANALYTICAL REPORT

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

Laboratory Job ID: 410-10432-1
Client Project/Site: Boeing of Portland/0025116.120.412

For:
Landau & Associates, Inc.
Sound View Plaza, 130 2nd Ave S
Edmonds, Washington 98020-9129

Attn: Chris Kimmel

Barb Weyandt

Authorized for release by:
9/11/2020 5:32:42 PM
Barbara Weyandt, Project Manager
(717)556-7264
barbaraweyandt@eurofinsus.com

Designee for

Kay Hower, Principal Project Manager
(717)556-7364
kayhower@eurofinsus.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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 recoveries that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result.

* 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 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. 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 LANACASTER 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. 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.

Barb Weyandt

Barbara Weyandt
Project Manager
9/11/2020 5:32:42 PM

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Detection Summary 6
Client Sample Results 7
Surrogate Summary 13
QC Sample Results 14
QC Association Summary 21
Lab Chronicle 23
Certification Summary 25
Method Summary 26
Sample Summary 27
Chain of Custody 28
Receipt Checklists 29

Definitions/Glossary

Client: Landau & Associates, Inc. Job ID: 410-10432-1
Project/Site: Boeing of Portland/0025116.120.412

Qualifiers

GC/MS VOA

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

HPLC/IC

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

Metals

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

General Chemistry

Qualifier	Qualifier Description
E	Result exceeded calibration range.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL.
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: 410-10432-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-10432-1

Receipt
The samples were received on 8/12/2020 11:14 AM; the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.8°C

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

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

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

General Chemistry
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/0025116.120.412

Job ID: 410-10432-1

Client Sample ID: Tower Inf-0820 — Lab Sample ID: 410-10432-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	2.16		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	2.09		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	0.342		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	9.80		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.899		0.200		ug/L	1		8260C LL	Total/NA
Sulfate	7.10		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
Iron	1.92		0.200		mg/L	1		6010D	Total Recoverable
Iron	1.67		0.206		mg/L	1		6010D	Dissolved
Total Organic Carbon	1.65		1.00		mg/L	1		5310C-2011	Total/NA

Client Sample ID: Tower InD-0820 — Lab Sample ID: 410-10432-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	2.20		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	2.07		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	0.328		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	9.94		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.915		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: Tower Eff-0820 — Lab Sample ID: 410-10432-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Sulfate	8.48		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
Iron	2.59		0.200		mg/L	1		6010D	Total Recoverable
Iron	0.842		0.206		mg/L	1		6010D	Dissolved
Total Organic Carbon	3.92		1.00		mg/L	1		5310C-2011	Total/NA
Total Phosphorus as PO4	0.646		0.310		mg/L	1		365.1	Dissolved

Client Sample ID: Tower EfD-0820 — Lab Sample ID: 410-10432-4

No Detections.

Client Sample ID: Trip Blanks — Lab Sample ID: 410-10432-5

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client: Landau & Associates, Inc.
Job ID: 410-10432-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: Tower Inf-0820
Lab Sample ID: 410-10432-1
Date Collected: 08/11/20 15:00
Matrix: Water
Date Received: 08/12/20 11:14

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			08/18/20 02:41	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/18/20 02:41	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/18/20 02:41	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/18/20 02:41	1
1,1-Dichloroethene	**2.16**		0.200		ug/L			08/18/20 02:41	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/18/20 02:41	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/18/20 02:41	1
2-Butanone	5.00	U	5.00		ug/L			08/18/20 02:41	1
2-Hexanone	5.00	U	5.00		ug/L			08/18/20 02:41	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/18/20 02:41	1
Acetone	5.00	U	5.00		ug/L			08/18/20 02:41	1
Benzene	0.200	U	0.200		ug/L			08/18/20 02:41	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/18/20 02:41	1
Bromoform	1.00	U	1.00		ug/L			08/18/20 02:41	1
Bromomethane	0.500	U	0.500		ug/L			08/18/20 02:41	1
Carbon disulfide	0.500	U	0.500		ug/L			08/18/20 02:41	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/18/20 02:41	1
Chlorobenzene	0.500	U	0.500		ug/L			08/18/20 02:41	1
Chloroethane	0.500	U	0.500		ug/L			08/18/20 02:41	1
Chloroform	0.200	U	0.200		ug/L			08/18/20 02:41	1
Chloromethane	0.500	U	0.500		ug/L			08/18/20 02:41	1
cis-1,2-Dichloroethene	**2.09**		0.200		ug/L			08/18/20 02:41	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/18/20 02:41	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/18/20 02:41	1
Ethylbenzene	0.500	U	0.500		ug/L			08/18/20 02:41	1
Freon 113	0.500	U	0.500		ug/L			08/18/20 02:41	1
m&p-Xylene	0.500	U	0.500		ug/L			08/18/20 02:41	1
Methylene Chloride	0.500	U	0.500		ug/L			08/18/20 02:41	1
o-Xylene	0.500	U	0.500		ug/L			08/18/20 02:41	1
Styrene	0.500	U	0.500		ug/L			08/18/20 02:41	1
Tetrachloroethene	**0.342**		0.200		ug/L			08/18/20 02:41	1
Toluene	0.200	U	0.200		ug/L			08/18/20 02:41	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/18/20 02:41	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/18/20 02:41	1
Trichloroethene	**9.80**		0.200		ug/L			08/18/20 02:41	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/18/20 02:41	1
Vinyl acetate	0.500	U	0.500		ug/L			08/18/20 02:41	1
Vinyl chloride	**0.899**		0.200		ug/L			08/18/20 02:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*80 - 120*		*08/18/20 02:41*	*1*
Dibromofluoromethane (Surr)	*111*		*80 - 120*		*08/18/20 02:41*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/18/20 02:41*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/18/20 02:41*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**7.10**		5.00		mg/L			08/23/20 13:45	5

Client Sample ID: Tower Inf-0820
Lab Sample ID: 410-10432-1

Date Collected: 08/11/20 15:00
Matrix: Water
Date Received: 08/12/20 11:14

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**1.92**		0.200		mg/L		08/13/20 02:34	08/19/20 19:16	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**1.67**		0.206		mg/L		08/17/20 06:15	08/19/20 18:30	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1.65**		1.00		mg/L			08/18/20 19:48	1

Client Sample ID: Tower InD-0820
Lab Sample ID: 410-10432-2

Date Collected: 08/11/20 15:30
Matrix: Water
Date Received: 08/12/20 11:14

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			08/18/20 03:03	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/18/20 03:03	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/18/20 03:03	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/18/20 03:03	1
1,1-Dichloroethene	**2.20**		0.200		ug/L			08/18/20 03:03	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/18/20 03:03	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/18/20 03:03	1
2-Butanone	5.00	U	5.00		ug/L			08/18/20 03:03	1
2-Hexanone	5.00	U	5.00		ug/L			08/18/20 03:03	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/18/20 03:03	1
Acetone	5.00	U	5.00		ug/L			08/18/20 03:03	1
Benzene	0.200	U	0.200		ug/L			08/18/20 03:03	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/18/20 03:03	1
Bromoform	1.00	U	1.00		ug/L			08/18/20 03:03	1
Bromomethane	0.500	U	0.500		ug/L			08/18/20 03:03	1
Carbon disulfide	0.500	U	0.500		ug/L			08/18/20 03:03	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/18/20 03:03	1
Chlorobenzene	0.500	U	0.500		ug/L			08/18/20 03:03	1
Chloroethane	0.500	U	0.500		ug/L			08/18/20 03:03	1
Chloroform	0.200	U	0.200		ug/L			08/18/20 03:03	1
Chloromethane	0.500	U	0.500		ug/L			08/18/20 03:03	1
cis-1,2-Dichloroethene	**2.07**		0.200		ug/L			08/18/20 03:03	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/18/20 03:03	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/18/20 03:03	1
Ethylbenzene	0.500	U	0.500		ug/L			08/18/20 03:03	1
Freon 113	0.500	U	0.500		ug/L			08/18/20 03:03	1
m&p-Xylene	0.500	U	0.500		ug/L			08/18/20 03:03	1
Methylene Chloride	0.500	U	0.500		ug/L			08/18/20 03:03	1
o-Xylene	0.500	U	0.500		ug/L			08/18/20 03:03	1
Styrene	0.500	U	0.500		ug/L			08/18/20 03:03	1
Tetrachloroethene	**0.328**		0.200		ug/L			08/18/20 03:03	1
Toluene	0.200	U	0.200		ug/L			08/18/20 03:03	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/18/20 03:03	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/18/20 03:03	1

Client Sample ID: Tower InD-0820

Lab Sample ID: 410-10432-2

Date Collected: 08/11/20 15:30

Matrix: Water

Date Received: 08/12/20 11:14

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	**9.94**		0.200		ug/L			08/18/20 03:03	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/18/20 03:03	1
Vinyl acetate	0.500	U	0.500		ug/L			08/18/20 03:03	1
Vinyl chloride	**0.915**		0.200		ug/L			08/18/20 03:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/18/20 03:03*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 120*		*08/18/20 03:03*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/18/20 03:03*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/18/20 03:03*	*1*

Client Sample ID: Tower Eff-0820

Lab Sample ID: 410-10432-3

Date Collected: 08/11/20 15:14

Matrix: Water

Date Received: 08/12/20 11:14

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			08/18/20 03:25	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/18/20 03:25	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/18/20 03:25	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/18/20 03:25	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/18/20 03:25	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/18/20 03:25	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/18/20 03:25	1
2-Butanone	5.00	U	5.00		ug/L			08/18/20 03:25	1
2-Hexanone	5.00	U	5.00		ug/L			08/18/20 03:25	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/18/20 03:25	1
Acetone	5.00	U	5.00		ug/L			08/18/20 03:25	1
Benzene	0.200	U	0.200		ug/L			08/18/20 03:25	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/18/20 03:25	1
Bromoform	1.00	U	1.00		ug/L			08/18/20 03:25	1
Bromomethane	0.500	U	0.500		ug/L			08/18/20 03:25	1
Carbon disulfide	0.500	U	0.500		ug/L			08/18/20 03:25	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/18/20 03:25	1
Chlorobenzene	0.500	U	0.500		ug/L			08/18/20 03:25	1
Chloroethane	0.500	U	0.500		ug/L			08/18/20 03:25	1
Chloroform	0.200	U	0.200		ug/L			08/18/20 03:25	1
Chloromethane	0.500	U	0.500		ug/L			08/18/20 03:25	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/18/20 03:25	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/18/20 03:25	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/18/20 03:25	1
Ethylbenzene	0.500	U	0.500		ug/L			08/18/20 03:25	1
Freon 113	0.500	U	0.500		ug/L			08/18/20 03:25	1
m&p-Xylene	0.500	U	0.500		ug/L			08/18/20 03:25	1
Methylene Chloride	0.500	U	0.500		ug/L			08/18/20 03:25	1
o-Xylene	0.500	U	0.500		ug/L			08/18/20 03:25	1
Styrene	0.500	U	0.500		ug/L			08/18/20 03:25	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/18/20 03:25	1
Toluene	0.200	U	0.200		ug/L			08/18/20 03:25	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/18/20 03:25	1

Client Sample ID: Tower Eff-0820
Lab Sample ID: 410-10432-3

Date Collected: 08/11/20 15:14
Matrix: Water
Date Received: 08/12/20 11:14

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/18/20 03:25	1
Trichloroethene	0.200	U	0.200		ug/L			08/18/20 03:25	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/18/20 03:25	1
Vinyl acetate	0.500	U	0.500		ug/L			08/18/20 03:25	1
Vinyl chloride	0.200	U	0.200		ug/L			08/18/20 03:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*80 - 120*		*08/18/20 03:25*	*1*
Dibromofluoromethane (Surr)	*112*		*80 - 120*		*08/18/20 03:25*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/18/20 03:25*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/18/20 03:25*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	<0.50		0.50	0.25	mg/L			08/13/20 12:34	5
Nitrogen, Nitrite	<0.50		0.50	0.25	mg/L			08/13/20 12:34	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**8.48**		5.00		mg/L			08/13/20 12:34	5

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**2.59**		0.200		mg/L		08/13/20 02:34	08/19/20 19:20	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.842**		0.206		mg/L		08/17/20 06:15	08/19/20 18:55	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-N	0.240	U	0.240		mg/L			08/13/20 22:23	1
Total Organic Carbon	**3.92**		1.00		mg/L			08/18/20 20:29	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as PO4	**0.646**		0.310		mg/L		08/19/20 09:02	08/19/20 13:08	1

Client Sample ID: Tower EfD-0820
Lab Sample ID: 410-10432-4

Date Collected: 08/11/20 15:40
Matrix: Water
Date Received: 08/12/20 11:14

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			08/18/20 03:47	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/18/20 03:47	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/18/20 03:47	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/18/20 03:47	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/18/20 03:47	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/18/20 03:47	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/18/20 03:47	1
2-Butanone	5.00	U	5.00		ug/L			08/18/20 03:47	1

Client: Landau & Associates, Inc.
Job ID: 410-10432-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: Tower EfD-0820
Lab Sample ID: 410-10432-4
Date Collected: 08/11/20 15:40
Matrix: Water
Date Received: 08/12/20 11:14

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	5.00	U	5.00		ug/L			08/18/20 03:47	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/18/20 03:47	1
Acetone	5.00	U	5.00		ug/L			08/18/20 03:47	1
Benzene	0.200	U	0.200		ug/L			08/18/20 03:47	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/18/20 03:47	1
Bromoform	1.00	U	1.00		ug/L			08/18/20 03:47	1
Bromomethane	0.500	U	0.500		ug/L			08/18/20 03:47	1
Carbon disulfide	0.500	U	0.500		ug/L			08/18/20 03:47	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/18/20 03:47	1
Chlorobenzene	0.500	U	0.500		ug/L			08/18/20 03:47	1
Chloroethane	0.500	U	0.500		ug/L			08/18/20 03:47	1
Chloroform	0.200	U	0.200		ug/L			08/18/20 03:47	1
Chloromethane	0.500	U	0.500		ug/L			08/18/20 03:47	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/18/20 03:47	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/18/20 03:47	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/18/20 03:47	1
Ethylbenzene	0.500	U	0.500		ug/L			08/18/20 03:47	1
Freon 113	0.500	U	0.500		ug/L			08/18/20 03:47	1
m&p-Xylene	0.500	U	0.500		ug/L			08/18/20 03:47	1
Methylene Chloride	0.500	U	0.500		ug/L			08/18/20 03:47	1
o-Xylene	0.500	U	0.500		ug/L			08/18/20 03:47	1
Styrene	0.500	U	0.500		ug/L			08/18/20 03:47	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/18/20 03:47	1
Toluene	0.200	U	0.200		ug/L			08/18/20 03:47	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/18/20 03:47	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/18/20 03:47	1
Trichloroethene	0.200	U	0.200		ug/L			08/18/20 03:47	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/18/20 03:47	1
Vinyl acetate	0.500	U	0.500		ug/L			08/18/20 03:47	1
Vinyl chloride	0.200	U	0.200		ug/L			08/18/20 03:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*08/18/20 03:47*	*1*
Dibromofluoromethane (Surr)	*111*		*80 - 120*		*08/18/20 03:47*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/18/20 03:47*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/18/20 03:47*	*1*

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10432-5
Date Collected: 08/11/20 00:00
Matrix: Water
Date Received: 08/12/20 11:14

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			08/17/20 23:04	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/17/20 23:04	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/17/20 23:04	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/17/20 23:04	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 23:04	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/17/20 23:04	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/17/20 23:04	1

Client: Landau & Associates, Inc.
Job ID: 410-10432-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10432-5
Date Collected: 08/11/20 00:00
Matrix: Water
Date Received: 08/12/20 11:14

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone	5.00	U	5.00		ug/L			08/17/20 23:04	1
2-Hexanone	5.00	U	5.00		ug/L			08/17/20 23:04	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/17/20 23:04	1
Acetone	5.00	U	5.00		ug/L			08/17/20 23:04	1
Benzene	0.200	U	0.200		ug/L			08/17/20 23:04	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/17/20 23:04	1
Bromoform	1.00	U	1.00		ug/L			08/17/20 23:04	1
Bromomethane	0.500	U	0.500		ug/L			08/17/20 23:04	1
Carbon disulfide	0.500	U	0.500		ug/L			08/17/20 23:04	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/17/20 23:04	1
Chlorobenzene	0.500	U	0.500		ug/L			08/17/20 23:04	1
Chloroethane	0.500	U	0.500		ug/L			08/17/20 23:04	1
Chloroform	0.200	U	0.200		ug/L			08/17/20 23:04	1
Chloromethane	0.500	U	0.500		ug/L			08/17/20 23:04	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 23:04	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 23:04	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/17/20 23:04	1
Ethylbenzene	0.500	U	0.500		ug/L			08/17/20 23:04	1
Freon 113	0.500	U	0.500		ug/L			08/17/20 23:04	1
m&p-Xylene	0.500	U	0.500		ug/L			08/17/20 23:04	1
Methylene Chloride	0.500	U	0.500		ug/L			08/17/20 23:04	1
o-Xylene	0.500	U	0.500		ug/L			08/17/20 23:04	1
Styrene	0.500	U	0.500		ug/L			08/17/20 23:04	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/17/20 23:04	1
Toluene	0.200	U	0.200		ug/L			08/17/20 23:04	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 23:04	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 23:04	1
Trichloroethene	0.200	U	0.200		ug/L			08/17/20 23:04	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/17/20 23:04	1
Vinyl acetate	0.500	U	0.500		ug/L			08/17/20 23:04	1
Vinyl chloride	0.200	U	0.200		ug/L			08/17/20 23:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*80 - 120*		*08/17/20 23:04*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 120*		*08/17/20 23:04*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*08/17/20 23:04*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/17/20 23:04*	*1*

Surrogate Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10432-1

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)
410-10432-1	Tower Inf-0820	109	111	95	99
410-10432-2	Tower InD-0820	107	110	95	99
410-10432-3	Tower Eff-0820	109	112	95	98
410-10432-4	Tower EfD-0820	108	111	95	97
410-10432-5	Trip Blanks	109	110	94	98
LCS 410-34120/5	Lab Control Sample	104	106	99	100
LCS 410-34120/7	Lab Control Sample	107	106	100	100
LCSD 410-34120/6	Lab Control Sample Dup	104	104	99	99
LCSD 410-34120/8	Lab Control Sample Dup	104	106	100	99
MB 410-34120/10	Method Blank	107	109	97	99

Surrogate Legend

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

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10432-1

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

Lab Sample ID: MB 410-34120/10
Matrix: Water
Analysis Batch: 34120

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			08/17/20 21:33	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/17/20 21:33	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/17/20 21:33	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/17/20 21:33	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/17/20 21:33	1
2-Butanone	5.00	U	5.00		ug/L			08/17/20 21:33	1
2-Hexanone	5.00	U	5.00		ug/L			08/17/20 21:33	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/17/20 21:33	1
Acetone	5.00	U	5.00		ug/L			08/17/20 21:33	1
Benzene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Bromoform	1.00	U	1.00		ug/L			08/17/20 21:33	1
Bromomethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Carbon disulfide	0.500	U	0.500		ug/L			08/17/20 21:33	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/17/20 21:33	1
Chlorobenzene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Chloroethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Chloroform	0.200	U	0.200		ug/L			08/17/20 21:33	1
Chloromethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Ethylbenzene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Freon 113	0.500	U	0.500		ug/L			08/17/20 21:33	1
m&p-Xylene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Methylene Chloride	0.500	U	0.500		ug/L			08/17/20 21:33	1
o-Xylene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Styrene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Toluene	0.200	U	0.200		ug/L			08/17/20 21:33	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Trichloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Vinyl acetate	0.500	U	0.500		ug/L			08/17/20 21:33	1
Vinyl chloride	0.200	U	0.200		ug/L			08/17/20 21:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/17/20 21:33*	*1*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*08/17/20 21:33*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*08/17/20 21:33*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/17/20 21:33*	*1*

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

Lab Sample ID: LCS 410-34120/5
Matrix: Water
Analysis Batch: 34120

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	5.347		ug/L		107	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.512		ug/L		110	75 - 123
1,1,2-Trichloroethane	5.00	5.625		ug/L		112	80 - 120
1,1-Dichloroethane	5.00	5.569		ug/L		111	74 - 120
1,1-Dichloroethene	5.00	5.421		ug/L		108	80 - 131
1,2-Dichloroethane	5.00	5.844		ug/L		117	69 - 122
1,2-Dichloropropane	5.00	5.666		ug/L		113	80 - 120
2-Butanone	37.5	34.18		ug/L		91	59 - 141
2-Hexanone	25.0	22.08		ug/L		88	52 - 140
4-Methyl-2-pentanone	25.0	21.51		ug/L		86	55 - 140
Acetone	37.5	32.78		ug/L		87	60 - 146
Benzene	5.00	5.314		ug/L		106	80 - 120
Bromodichloromethane	5.00	5.754		ug/L		115	73 - 124
Bromoform	5.00	5.422		ug/L		108	49 - 144
Bromomethane	5.00	4.964		ug/L		99	60 - 136
Carbon disulfide	5.00	5.310		ug/L		106	67 - 130
Carbon tetrachloride	5.00	5.352		ug/L		107	64 - 141
Chlorobenzene	5.00	5.250		ug/L		105	80 - 120
Chloroethane	5.00	5.125		ug/L		103	63 - 120
Chloroform	5.00	5.630		ug/L		113	80 - 120
Chloromethane	5.00	5.005		ug/L		100	56 - 124
cis-1,2-Dichloroethene	5.00	5.561		ug/L		111	80 - 122
cis-1,3-Dichloropropene	5.00	5.218		ug/L		104	67 - 121
Dibromochloromethane	5.00	5.501		ug/L		110	64 - 138
Ethylbenzene	5.00	5.130		ug/L		103	80 - 120
Freon 113	5.00	5.000		ug/L		100	75 - 133
m&p-Xylene	10.0	10.34		ug/L		103	80 - 120
Methylene Chloride	5.00	5.353		ug/L		107	80 - 120
o-Xylene	5.00	4.966		ug/L		99	80 - 120
Styrene	5.00	5.169		ug/L		103	80 - 120
Tetrachloroethene	5.00	5.113		ug/L		102	80 - 120
Toluene	5.00	5.129		ug/L		103	80 - 120
trans-1,2-Dichloroethene	5.00	5.252		ug/L		105	80 - 122
trans-1,3-Dichloropropene	5.00	5.119		ug/L		102	61 - 129
Trichloroethene	5.00	5.321		ug/L		106	80 - 120
Trichlorofluoromethane	5.00	5.730		ug/L		115	62 - 136
Vinyl chloride	5.00	5.066		ug/L		101	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

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

Lab Sample ID: LCS 410-34120/7
Matrix: Water
Analysis Batch: 34120

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	12.49		ug/L		100	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-34120/6
Matrix: Water
Analysis Batch: 34120

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	5.362		ug/L		107	78 - 126	0	30
1,1,2,2-Tetrachloroethane			5.00	5.511		ug/L		110	75 - 123	0	30
1,1,2-Trichloroethane			5.00	5.602		ug/L		112	80 - 120	0	30
1,1-Dichloroethane			5.00	5.556		ug/L		111	74 - 120	0	30
1,1-Dichloroethene			5.00	5.395		ug/L		108	80 - 131	0	30
1,2-Dichloroethane			5.00	5.746		ug/L		115	69 - 122	2	30
1,2-Dichloropropane			5.00	5.585		ug/L		112	80 - 120	1	30
2-Butanone			37.5	34.15		ug/L		91	59 - 141	0	30
2-Hexanone			25.0	22.09		ug/L		88	52 - 140	0	30
4-Methyl-2-pentanone			25.0	21.28		ug/L		85	55 - 140	1	30
Acetone			37.5	31.14		ug/L		83	60 - 146	5	30
Benzene			5.00	5.200		ug/L		104	80 - 120	2	30
Bromodichloromethane			5.00	5.492		ug/L		110	73 - 124	5	30
Bromoform			5.00	5.355		ug/L		107	49 - 144	1	30
Bromomethane			5.00	4.905		ug/L		98	60 - 136	1	30
Carbon disulfide			5.00	5.198		ug/L		104	67 - 130	2	30
Carbon tetrachloride			5.00	5.266		ug/L		105	64 - 141	2	30
Chlorobenzene			5.00	5.126		ug/L		103	80 - 120	2	30
Chloroethane			5.00	5.060		ug/L		101	63 - 120	1	30
Chloroform			5.00	5.516		ug/L		110	80 - 120	2	30
Chloromethane			5.00	4.873		ug/L		97	56 - 124	3	30
cis-1,2-Dichloroethene			5.00	5.546		ug/L		111	80 - 122	0	30
cis-1,3-Dichloropropene			5.00	5.165		ug/L		103	67 - 121	1	30
Dibromochloromethane			5.00	5.400		ug/L		108	64 - 138	2	30
Ethylbenzene			5.00	5.047		ug/L		101	80 - 120	2	30
Freon 113			5.00	5.036		ug/L		101	75 - 133	1	30
m&p-Xylene			10.0	10.15		ug/L		101	80 - 120	2	30
Methylene Chloride			5.00	5.299		ug/L		106	80 - 120	1	30
o-Xylene			5.00	4.969		ug/L		99	80 - 120	0	30
Styrene			5.00	5.116		ug/L		102	80 - 120	1	30
Tetrachloroethene			5.00	5.048		ug/L		101	80 - 120	1	30
Toluene			5.00	5.160		ug/L		103	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	5.207		ug/L		104	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	5.076		ug/L		102	61 - 129	1	30
Trichloroethene			5.00	5.212		ug/L		104	80 - 120	2	30

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

Lab Sample ID: LCSD 410-34120/6
Matrix: Water
Analysis Batch: 34120

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	5.668		ug/L		113	62 - 136	1	30
Vinyl chloride			5.00	5.045		ug/L		101	60 - 125	0	30

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

Lab Sample ID: LCSD 410-34120/8
Matrix: Water
Analysis Batch: 34120

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	12.34		ug/L		99	38 - 145	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-32851/15
Matrix: Water
Analysis Batch: 32851

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	<0.10		0.10	0.050	mg/L			08/13/20 15:20	1
Nitrogen, Nitrite	<0.10		0.10	0.050	mg/L			08/13/20 15:20	1

Lab Sample ID: LCS 410-32851/14
Matrix: Water
Analysis Batch: 32851

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.683		mg/L		91	90 - 110		
Nitrogen, Nitrite			0.750	0.721		mg/L		96	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-32850/15
Matrix: Water
Analysis Batch: 32850

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			08/13/20 15:20	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 410-32850/14
Matrix: Water
Analysis Batch: 32850

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.225		mg/L		96	90 - 110

Lab Sample ID: MB 410-36257/4
Matrix: Water
Analysis Batch: 36257

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00	mg/L			08/23/20 10:17	1

Lab Sample ID: LCS 410-36257/3
Matrix: Water
Analysis Batch: 36257

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.677		mg/L		102	90 - 110

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 410-33789/1-A
Matrix: Water
Analysis Batch: 35076

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33789

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.206	U	0.206	mg/L		08/17/20 06:15	08/19/20 17:35	1

Lab Sample ID: LCS 410-33789/2-A
Matrix: Water
Analysis Batch: 35076

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33789

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.402	0.4270		mg/L		106	80 - 120

Lab Sample ID: MB 410-32642/1-A
Matrix: Water
Analysis Batch: 35083

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 32642

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.200	U	0.200	mg/L		08/13/20 02:34	08/19/20 17:52	1

Lab Sample ID: LCS 410-32642/2-A
Matrix: Water
Analysis Batch: 35083

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 32642

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.402	0.4391		mg/L		109	80 - 120

Method: 365.1 - Phosphorus, Total

Lab Sample ID: MB 410-34852/2-A
Matrix: Water
Analysis Batch: 34970

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 34852

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as PO4	0.310	U	0.310		mg/L		08/19/20 09:02	08/19/20 13:05	1

Lab Sample ID: 410-10432-3 MS
Matrix: Water
Analysis Batch: 34970

Client Sample ID: Tower Eff-0820
Prep Type: Dissolved
Prep Batch: 34852

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Phosphorus as PO4	0.646		6.04	6.231	E	mg/L		92	90 - 110		

Lab Sample ID: 410-10432-3 DU
Matrix: Water
Analysis Batch: 34970

Client Sample ID: Tower Eff-0820
Prep Type: Dissolved
Prep Batch: 34852

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Phosphorus as PO4	0.646			0.6815	F5	mg/L				5	4

Method: 4500 NH3 D-2011 - Ammonia

Lab Sample ID: MB 410-33881/12
Matrix: Water
Analysis Batch: 33881

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-N	0.240	U	0.240		mg/L			08/13/20 21:44	1

Lab Sample ID: LCS 410-33881/15
Matrix: Water
Analysis Batch: 33881

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia-N			5.00	5.150		mg/L		103	82 - 124		

Lab Sample ID: 410-10432-3 MS
Matrix: Water
Analysis Batch: 33881

Client Sample ID: Tower Eff-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia-N	0.240	U	5.00	4.340		mg/L		87	82 - 124		

Lab Sample ID: 410-10432-3 MSD
Matrix: Water
Analysis Batch: 33881

Client Sample ID: Tower Eff-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia-N	0.240	U	5.00	4.680		mg/L		94	82 - 124	8	15

Method: 4500 NH3 D-2011 - Ammonia (Continued)

Lab Sample ID: 410-10432-3 DU
Client Sample ID: Tower Eff-0820
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 33881

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Ammonia-N	0.240	U		0.240	U	mg/L				NC	11

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-34844/5
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 34844

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			08/18/20 15:19	1

Lab Sample ID: LCS 410-34844/4
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 34844

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	24.18		mg/L		97	91 - 113		

GC/MS VOA

Analysis Batch: 34120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10432-1	Tower Inf-0820	Total/NA	Water	8260C LL	
410-10432-2	Tower InD-0820	Total/NA	Water	8260C LL	
410-10432-3	Tower Eff-0820	Total/NA	Water	8260C LL	
410-10432-4	Tower EfD-0820	Total/NA	Water	8260C LL	
410-10432-5	Trip Blanks	Total/NA	Water	8260C LL	
MB 410-34120/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-34120/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-34120/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-34120/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-34120/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

HPLC/IC

Analysis Batch: 32850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10432-3	Tower Eff-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-32850/15	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-32850/14	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 32851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10432-3	Tower Eff-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-32851/15	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-32851/14	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 36257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10432-1	Tower Inf-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-36257/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-36257/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 32642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10432-1	Tower Inf-0820	Total Recoverable	Water	3005A	
410-10432-3	Tower Eff-0820	Total Recoverable	Water	3005A	
MB 410-32642/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-32642/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 33789

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10432-1	Tower Inf-0820	Dissolved	Water	Non-Digest Prep	
410-10432-3	Tower Eff-0820	Dissolved	Water	Non-Digest Prep	
MB 410-33789/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-33789/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Analysis Batch: 35076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10432-1	Tower Inf-0820	Dissolved	Water	6010D	33789
410-10432-3	Tower Eff-0820	Dissolved	Water	6010D	33789
MB 410-33789/1-A	Method Blank	Total/NA	Water	6010D	33789

Metals (Continued)

Analysis Batch: 35076 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-33789/2-A	Lab Control Sample	Total/NA	Water	6010D	33789

Analysis Batch: 35083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10432-1	Tower Inf-0820	Total Recoverable	Water	6010D	32642
410-10432-3	Tower Eff-0820	Total Recoverable	Water	6010D	32642
MB 410-32642/1-A	Method Blank	Total Recoverable	Water	6010D	32642
LCS 410-32642/2-A	Lab Control Sample	Total Recoverable	Water	6010D	32642

General Chemistry

Analysis Batch: 33881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10432-3	Tower Eff-0820	Total/NA	Water	4500 NH3 D-2011	
MB 410-33881/12	Method Blank	Total/NA	Water	4500 NH3 D-2011	
LCS 410-33881/15	Lab Control Sample	Total/NA	Water	4500 NH3 D-2011	
410-10432-3 MS	Tower Eff-0820	Total/NA	Water	4500 NH3 D-2011	
410-10432-3 MSD	Tower Eff-0820	Total/NA	Water	4500 NH3 D-2011	
410-10432-3 DU	Tower Eff-0820	Total/NA	Water	4500 NH3 D-2011	

Analysis Batch: 34844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10432-1	Tower Inf-0820	Total/NA	Water	5310C-2011	
410-10432-3	Tower Eff-0820	Total/NA	Water	5310C-2011	
MB 410-34844/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-34844/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Prep Batch: 34852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10432-3	Tower Eff-0820	Dissolved	Water	365.1	
MB 410-34852/2-A	Method Blank	Total/NA	Water	365.1	
410-10432-3 MS	Tower Eff-0820	Dissolved	Water	365.1	
410-10432-3 DU	Tower Eff-0820	Dissolved	Water	365.1	

Analysis Batch: 34970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10432-3	Tower Eff-0820	Dissolved	Water	365.1	34852
MB 410-34852/2-A	Method Blank	Total/NA	Water	365.1	34852
410-10432-3 MS	Tower Eff-0820	Dissolved	Water	365.1	34852
410-10432-3 DU	Tower Eff-0820	Dissolved	Water	365.1	34852

Lab Chronicle

Client: Landau & Associates, Inc.
Job ID: 410-10432-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: Tower Inf-0820
Lab Sample ID: 410-10432-1
Date Collected: 08/11/20 15:00
Matrix: Water
Date Received: 08/12/20 11:14

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	34120	08/18/20 02:41	MJ8R	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	36257	08/23/20 13:45	GJ35	ELLE
Dissolved	Prep	Non-Digest Prep			33789	08/17/20 06:15	UJL8	ELLE
Dissolved	Analysis	6010D		1	35076	08/19/20 18:30	UCIG	ELLE
Total Recoverable	Prep	3005A			32642	08/13/20 02:34	UJL8	ELLE
Total Recoverable	Analysis	6010D		1	35083	08/19/20 19:16	UCIG	ELLE
Total/NA	Analysis	5310C-2011		1	34844	08/18/20 19:48	KGQ6	ELLE

Client Sample ID: Tower InD-0820
Lab Sample ID: 410-10432-2
Date Collected: 08/11/20 15:30
Matrix: Water
Date Received: 08/12/20 11:14

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	34120	08/18/20 03:03	MJ8R	ELLE

Client Sample ID: Tower Eff-0820
Lab Sample ID: 410-10432-3
Date Collected: 08/11/20 15:14
Matrix: Water
Date Received: 08/12/20 11:14

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	34120	08/18/20 03:25	MJ8R	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	32850	08/13/20 12:34	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	32851	08/13/20 12:34	GJ35	ELLE
Dissolved	Prep	Non-Digest Prep			33789	08/17/20 06:15	UJL8	ELLE
Dissolved	Analysis	6010D		1	35076	08/19/20 18:55	UCIG	ELLE
Total Recoverable	Prep	3005A			32642	08/13/20 02:34	UJL8	ELLE
Total Recoverable	Analysis	6010D		1	35083	08/19/20 19:20	UCIG	ELLE
Dissolved	Prep	365.1			34852	08/19/20 09:02	UNJS	ELLE
Dissolved	Analysis	365.1		1	34970	08/19/20 13:08	L8MI	ELLE
Total/NA	Analysis	4500 NH3 D-2011		1	33881	08/13/20 22:23	UYB0	ELLE
Total/NA	Analysis	5310C-2011		1	34844	08/18/20 20:29	KGQ6	ELLE

Client Sample ID: Tower EfD-0820
Lab Sample ID: 410-10432-4
Date Collected: 08/11/20 15:40
Matrix: Water
Date Received: 08/12/20 11:14

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	34120	08/18/20 03:47	MJ8R	ELLE

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10432-5
Date Collected: 08/11/20 00:00
Matrix: Water
Date Received: 08/12/20 11:14

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	34120	08/17/20 23:04	MJ8R	ELLE

Lab Chronicle

Client: Landau & Associates, Inc.
Job ID: 410-10432-1
Project/Site: Boeing of Portland/0025116.120.412

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: 410-10432-1
Project/Site: Boeing of Portland/0025116.120.412

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
365.1	365.1	Water	Total Phosphorus as PO4
6010D	3005A	Water	Iron
6010D	Non-Digest Prep	Water	Iron
8260C LL		Water	1,1,1-Trichloroethane
8260C LL		Water	1,1,2,2-Tetrachloroethane
8260C LL		Water	1,1,2-Trichloroethane
8260C LL		Water	1,1-Dichloroethane
8260C LL		Water	1,1-Dichloroethene
8260C LL		Water	1,2-Dichloroethane
8260C LL		Water	1,2-Dichloropropane
8260C LL		Water	2-Butanone
8260C LL		Water	2-Hexanone
8260C LL		Water	4-Methyl-2-pentanone
8260C LL		Water	Acetone
8260C LL		Water	Benzene
8260C LL		Water	Bromodichloromethane
8260C LL		Water	Bromoform
8260C LL		Water	Bromomethane
8260C LL		Water	Carbon disulfide
8260C LL		Water	Carbon tetrachloride
8260C LL		Water	Chlorobenzene
8260C LL		Water	Chloroethane
8260C LL		Water	Chloroform
8260C LL		Water	Chloromethane
8260C LL		Water	cis-1,2-Dichloroethene
8260C LL		Water	cis-1,3-Dichloropropene
8260C LL		Water	Dibromochloromethane
8260C LL		Water	Ethylbenzene
8260C LL		Water	Freon 113
8260C LL		Water	m&p-Xylene
8260C LL		Water	Methylene Chloride
8260C LL		Water	o-Xylene
8260C LL		Water	Styrene
8260C LL		Water	Tetrachloroethene
8260C LL		Water	Toluene
8260C LL		Water	trans-1,2-Dichloroethene
8260C LL		Water	trans-1,3-Dichloropropene
8260C LL		Water	Trichloroethene
8260C LL		Water	Trichlorofluoromethane
8260C LL		Water	Vinyl acetate
8260C LL		Water	Vinyl chloride

Method Summary

Client: Landau & Associates, Inc.
Job ID: 410-10432-1
Project/Site: Boeing of Portland/0025116.120.412

Method	Method Description	Protocol	Laboratory
8260C LL	Volatile Organic Compounds by GC/MS	SW846	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010D	Metals (ICP)	SW846	ELLE
365.1	Phosphorus, Total	EPA	ELLE
4500 NH3 D-2011	Ammonia	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
365.1	Sample Digestion for Total Phosphorus	MCAWW	ELLE
5030C	Purge and Trap	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

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: 410-10432-1
Project/Site: Boeing of Portland/0025116.120.412

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-10432-1	Tower Inf-0820	Water	08/11/20 15:00	08/12/20 11:14	
410-10432-2	Tower InD-0820	Water	08/11/20 15:30	08/12/20 11:14	
410-10432-3	Tower Eff-0820	Water	08/11/20 15:14	08/12/20 11:14	
410-10432-4	Tower EfD-0820	Water	08/11/20 15:40	08/12/20 11:14	
410-10432-5	Trip Blanks	Water	08/11/20 00:00	08/12/20 11:14	

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-10432 Chain of Custody

ental use only

ond.

1 Client Information

Site Location: Gresham, Oregon
Site Project: Boeing of Portland
Site Program/#: 025116.120.412
Boeing PM: Debbie Taege, John Rusoff
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☑ Boeing EHS ☐ Other (specify): _____
Sampler: WHL / GJN # of Coolers: 1

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	4 Analyses Requested: VOC (38 list)	TOC	Sulfate	Total Iron	Dissolved Iron	Nitrate	Nitrite	T Phosphorous as PO4	ammonia				5 Remarks/Comments
Tower Inf-0820	8/11/20	1500	H_2O	9(+4)	X	X	X	X	X								Metals QC collected at Inf(4)
Tower InD-0820	↓	1530	↓	3	X												
Tower Eff-0820		1514		11	X	X	X	X	X	X	X	X	X				
Tower EfD-0820	↓	1540	↓	3	X												
Trip Blanks	—	—	H_2O	2*	X												Trip blanks shared w/ ~~other~~ samples in cooler

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. Tom Taege	8/11 16:45		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
			8/12/20 1114

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

Temperature upon Receipt: 0.8 °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: 410-10432-1

Login Number: 10432

List Source: Eurofins Lancaster Laboratories Env

List Number: 1

Creator: Rivera-Santa, Julissa

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.	True	
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	

eurofins | Environment Testing America



ANALYTICAL REPORT

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

Laboratory Job ID: 410-10433-1
Client Project/Site: Boeing of Portland/0025116.120.412

For:
Landau & Associates, Inc.
Sound View Plaza, 130 2nd Ave S
Edmonds, Washington 98020-9129

Attn: Chris Kimmel

Barb Weyandt

Authorized for release by:
9/11/2020 5:33:34 PM
Barbara Weyandt, Project Manager
(717)556-7264
barbaraweyandt@eurofinsus.com

Designee for

Kay Hower, Principal Project Manager
(717)556-7364
kayhower@eurofinsus.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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 recoveries that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result.

* 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 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. 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 LANACASTER 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. 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.

Barb Weyandt

Barbara Weyandt
Project Manager
9/11/2020 5:33:34 PM

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Detection Summary 6
Client Sample Results 7
Surrogate Summary 10
QC Sample Results 11
QC Association Summary 17
Lab Chronicle 19
Certification Summary 20
Method Summary 21
Sample Summary 22
Chain of Custody 23
Receipt Checklists 24

Definitions/Glossary

Client: Landau & Associates, Inc. Job ID: 410-10433-1
Project/Site: Boeing of Portland/0025116.120.412

Qualifiers

GC/MS VOA

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

GC VOA

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

HPLC/IC

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

General Chemistry

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

Case Narrative

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10433-1

Job ID: 410-10433-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-10433-1

Receipt
The samples were received on 8/12/2020 11:14 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.8° C.

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

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

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

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

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

Detection Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10433-1

Client Sample ID: DP1-0820 — Lab Sample ID: 410-10433-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	8.83		5.00		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	0.536		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	1.17		0.200		ug/L	1		8260C LL	Total/NA
Methane (1C) - DL	20500		500		ug/L	100		RSK-175	Total/NA
Total Organic Carbon	30.0		5.00		mg/L	5		5310C-2011	Total/NA

Client Sample ID: Trip blanks — Lab Sample ID: 410-10433-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: DP1-0820

Date Collected: 08/11/20 14:55
Date Received: 08/12/20 11:14

Lab Sample ID: 410-10433-1

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			08/18/20 04:08	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/18/20 04:08	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/18/20 04:08	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/18/20 04:08	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/18/20 04:08	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/18/20 04:08	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/18/20 04:08	1
2-Butanone	5.00	U	5.00		ug/L			08/18/20 04:08	1
2-Hexanone	5.00	U	5.00		ug/L			08/18/20 04:08	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/18/20 04:08	1
Acetone	**8.83**		5.00		ug/L			08/18/20 04:08	1
Benzene	0.200	U	0.200		ug/L			08/18/20 04:08	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/18/20 04:08	1
Bromoform	1.00	U	1.00		ug/L			08/18/20 04:08	1
Bromomethane	0.500	U	0.500		ug/L			08/18/20 04:08	1
Carbon disulfide	0.500	U	0.500		ug/L			08/18/20 04:08	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/18/20 04:08	1
Chlorobenzene	0.500	U	0.500		ug/L			08/18/20 04:08	1
Chloroethane	0.500	U	0.500		ug/L			08/18/20 04:08	1
Chloroform	0.200	U	0.200		ug/L			08/18/20 04:08	1
Chloromethane	0.500	U	0.500		ug/L			08/18/20 04:08	1
cis-1,2-Dichloroethene	**0.536**		0.200		ug/L			08/18/20 04:08	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/18/20 04:08	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/18/20 04:08	1
Ethylbenzene	0.500	U	0.500		ug/L			08/18/20 04:08	1
Freon 113	0.500	U	0.500		ug/L			08/18/20 04:08	1
m&p-Xylene	0.500	U	0.500		ug/L			08/18/20 04:08	1
Methylene Chloride	0.500	U	0.500		ug/L			08/18/20 04:08	1
o-Xylene	0.500	U	0.500		ug/L			08/18/20 04:08	1
Styrene	0.500	U	0.500		ug/L			08/18/20 04:08	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/18/20 04:08	1
Toluene	0.200	U	0.200		ug/L			08/18/20 04:08	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/18/20 04:08	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/18/20 04:08	1
Trichloroethene	0.200	U	0.200		ug/L			08/18/20 04:08	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/18/20 04:08	1
Vinyl acetate	0.500	U	0.500		ug/L			08/18/20 04:08	1
Vinyl chloride	**1.17**		0.200		ug/L			08/18/20 04:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*08/18/20 04:08*	*1*
Dibromofluoromethane (Surr)	*111*		*80 - 120*		*08/18/20 04:08*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*08/18/20 04:08*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/18/20 04:08*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/14/20 08:53	08/14/20 11:56	1
Ethane (1C)	5.00	U	5.00		ug/L		08/14/20 08:53	08/14/20 11:56	1
Ethene (1C)	5.00	U	5.00		ug/L		08/14/20 08:53	08/14/20 11:56	1

Client Sample ID: DP1-0820

Date Collected: 08/11/20 14:55
Date Received: 08/12/20 11:14

Lab Sample ID: 410-10433-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*80*		*28 - 140*	*08/14/20 08:53*	*08/14/20 11:56*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**20500**		500		ug/L		08/15/20 10:11	08/15/20 15:00	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*98*		*28 - 140*	*08/15/20 10:11*	*08/15/20 15:00*	*100*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.00	U	5.00		mg/L			08/17/20 16:57	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**30.0**		5.00		mg/L			08/18/20 20:42	5

Client Sample ID: Trip blanks

Date Collected: 08/11/20 00:00
Date Received: 08/12/20 11:14

Lab Sample ID: 410-10433-2

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			08/17/20 23:26	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/17/20 23:26	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/17/20 23:26	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/17/20 23:26	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 23:26	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/17/20 23:26	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/17/20 23:26	1
2-Butanone	5.00	U	5.00		ug/L			08/17/20 23:26	1
2-Hexanone	5.00	U	5.00		ug/L			08/17/20 23:26	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/17/20 23:26	1
Acetone	5.00	U	5.00		ug/L			08/17/20 23:26	1
Benzene	0.200	U	0.200		ug/L			08/17/20 23:26	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/17/20 23:26	1
Bromoform	1.00	U	1.00		ug/L			08/17/20 23:26	1
Bromomethane	0.500	U	0.500		ug/L			08/17/20 23:26	1
Carbon disulfide	0.500	U	0.500		ug/L			08/17/20 23:26	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/17/20 23:26	1
Chlorobenzene	0.500	U	0.500		ug/L			08/17/20 23:26	1
Chloroethane	0.500	U	0.500		ug/L			08/17/20 23:26	1
Chloroform	0.200	U	0.200		ug/L			08/17/20 23:26	1
Chloromethane	0.500	U	0.500		ug/L			08/17/20 23:26	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 23:26	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 23:26	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/17/20 23:26	1
Ethylbenzene	0.500	U	0.500		ug/L			08/17/20 23:26	1
Freon 113	0.500	U	0.500		ug/L			08/17/20 23:26	1
m&p-Xylene	0.500	U	0.500		ug/L			08/17/20 23:26	1
Methylene Chloride	0.500	U	0.500		ug/L			08/17/20 23:26	1

Client: Landau & Associates, Inc.
Job ID: 410-10433-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: Trip blanks
Lab Sample ID: 410-10433-2
Date Collected: 08/11/20 00:00
Matrix: Water
Date Received: 08/12/20 11:14

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.500	U	0.500		ug/L			08/17/20 23:26	1
Styrene	0.500	U	0.500		ug/L			08/17/20 23:26	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/17/20 23:26	1
Toluene	0.200	U	0.200		ug/L			08/17/20 23:26	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 23:26	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 23:26	1
Trichloroethene	0.200	U	0.200		ug/L			08/17/20 23:26	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/17/20 23:26	1
Vinyl acetate	0.500	U	0.500		ug/L			08/17/20 23:26	1
Vinyl chloride	0.200	U	0.200		ug/L			08/17/20 23:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*08/17/20 23:26*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 120*		*08/17/20 23:26*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*08/17/20 23:26*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/17/20 23:26*	*1*

Surrogate Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10433-1

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)
410-10433-1	DP1-0820	106	111	98	98
410-10433-2	Trip blanks	106	110	96	99
LCS 410-34120/5	Lab Control Sample	104	106	99	100
LCS 410-34120/7	Lab Control Sample	107	106	100	100
LCSD 410-34120/6	Lab Control Sample Dup	104	104	99	99
LCSD 410-34120/8	Lab Control Sample Dup	104	106	100	99
MB 410-34120/10	Method Blank	107	109	97	99

Surrogate Legend

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

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		Propene1
Lab Sample ID	Client Sample ID	(28-140)
410-10433-1	DP1-0820	80
410-10433-1 - DL	DP1-0820	98
LCS 410-33216/2-A	Lab Control Sample	95
LCS 410-33545/2-A	Lab Control Sample	105
LCSD 410-33216/3-A	Lab Control Sample Dup	96
LCSD 410-33545/3-A	Lab Control Sample Dup	102
MB 410-33216/1-A	Method Blank	96
MB 410-33545/1-A	Method Blank	101

Surrogate Legend

Propene = Propene

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10433-1

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

Lab Sample ID: MB 410-34120/10
Matrix: Water
Analysis Batch: 34120

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			08/17/20 21:33	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/17/20 21:33	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/17/20 21:33	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/17/20 21:33	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/17/20 21:33	1
2-Butanone	5.00	U	5.00		ug/L			08/17/20 21:33	1
2-Hexanone	5.00	U	5.00		ug/L			08/17/20 21:33	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/17/20 21:33	1
Acetone	5.00	U	5.00		ug/L			08/17/20 21:33	1
Benzene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Bromoform	1.00	U	1.00		ug/L			08/17/20 21:33	1
Bromomethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Carbon disulfide	0.500	U	0.500		ug/L			08/17/20 21:33	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/17/20 21:33	1
Chlorobenzene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Chloroethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Chloroform	0.200	U	0.200		ug/L			08/17/20 21:33	1
Chloromethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Ethylbenzene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Freon 113	0.500	U	0.500		ug/L			08/17/20 21:33	1
m&p-Xylene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Methylene Chloride	0.500	U	0.500		ug/L			08/17/20 21:33	1
o-Xylene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Styrene	0.500	U	0.500		ug/L			08/17/20 21:33	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Toluene	0.200	U	0.200		ug/L			08/17/20 21:33	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Trichloroethene	0.200	U	0.200		ug/L			08/17/20 21:33	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/17/20 21:33	1
Vinyl acetate	0.500	U	0.500		ug/L			08/17/20 21:33	1
Vinyl chloride	0.200	U	0.200		ug/L			08/17/20 21:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/17/20 21:33*	*1*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*08/17/20 21:33*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*08/17/20 21:33*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/17/20 21:33*	*1*

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

Lab Sample ID: LCS 410-34120/5
Matrix: Water
Analysis Batch: 34120

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	5.347		ug/L		107	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.512		ug/L		110	75 - 123
1,1,2-Trichloroethane	5.00	5.625		ug/L		112	80 - 120
1,1-Dichloroethane	5.00	5.569		ug/L		111	74 - 120
1,1-Dichloroethene	5.00	5.421		ug/L		108	80 - 131
1,2-Dichloroethane	5.00	5.844		ug/L		117	69 - 122
1,2-Dichloropropane	5.00	5.666		ug/L		113	80 - 120
2-Butanone	37.5	34.18		ug/L		91	59 - 141
2-Hexanone	25.0	22.08		ug/L		88	52 - 140
4-Methyl-2-pentanone	25.0	21.51		ug/L		86	55 - 140
Acetone	37.5	32.78		ug/L		87	60 - 146
Benzene	5.00	5.314		ug/L		106	80 - 120
Bromodichloromethane	5.00	5.754		ug/L		115	73 - 124
Bromoform	5.00	5.422		ug/L		108	49 - 144
Bromomethane	5.00	4.964		ug/L		99	60 - 136
Carbon disulfide	5.00	5.310		ug/L		106	67 - 130
Carbon tetrachloride	5.00	5.352		ug/L		107	64 - 141
Chlorobenzene	5.00	5.250		ug/L		105	80 - 120
Chloroethane	5.00	5.125		ug/L		103	63 - 120
Chloroform	5.00	5.630		ug/L		113	80 - 120
Chloromethane	5.00	5.005		ug/L		100	56 - 124
cis-1,2-Dichloroethene	5.00	5.561		ug/L		111	80 - 122
cis-1,3-Dichloropropene	5.00	5.218		ug/L		104	67 - 121
Dibromochloromethane	5.00	5.501		ug/L		110	64 - 138
Ethylbenzene	5.00	5.130		ug/L		103	80 - 120
Freon 113	5.00	5.000		ug/L		100	75 - 133
m&p-Xylene	10.0	10.34		ug/L		103	80 - 120
Methylene Chloride	5.00	5.353		ug/L		107	80 - 120
o-Xylene	5.00	4.966		ug/L		99	80 - 120
Styrene	5.00	5.169		ug/L		103	80 - 120
Tetrachloroethene	5.00	5.113		ug/L		102	80 - 120
Toluene	5.00	5.129		ug/L		103	80 - 120
trans-1,2-Dichloroethene	5.00	5.252		ug/L		105	80 - 122
trans-1,3-Dichloropropene	5.00	5.119		ug/L		102	61 - 129
Trichloroethene	5.00	5.321		ug/L		106	80 - 120
Trichlorofluoromethane	5.00	5.730		ug/L		115	62 - 136
Vinyl chloride	5.00	5.066		ug/L		101	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

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

Lab Sample ID: LCS 410-34120/7
Matrix: Water
Analysis Batch: 34120

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	12.49		ug/L		100	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-34120/6
Matrix: Water
Analysis Batch: 34120

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	5.362		ug/L		107	78 - 126	0	30
1,1,2,2-Tetrachloroethane			5.00	5.511		ug/L		110	75 - 123	0	30
1,1,2-Trichloroethane			5.00	5.602		ug/L		112	80 - 120	0	30
1,1-Dichloroethane			5.00	5.556		ug/L		111	74 - 120	0	30
1,1-Dichloroethene			5.00	5.395		ug/L		108	80 - 131	0	30
1,2-Dichloroethane			5.00	5.746		ug/L		115	69 - 122	2	30
1,2-Dichloropropane			5.00	5.585		ug/L		112	80 - 120	1	30
2-Butanone			37.5	34.15		ug/L		91	59 - 141	0	30
2-Hexanone			25.0	22.09		ug/L		88	52 - 140	0	30
4-Methyl-2-pentanone			25.0	21.28		ug/L		85	55 - 140	1	30
Acetone			37.5	31.14		ug/L		83	60 - 146	5	30
Benzene			5.00	5.200		ug/L		104	80 - 120	2	30
Bromodichloromethane			5.00	5.492		ug/L		110	73 - 124	5	30
Bromoform			5.00	5.355		ug/L		107	49 - 144	1	30
Bromomethane			5.00	4.905		ug/L		98	60 - 136	1	30
Carbon disulfide			5.00	5.198		ug/L		104	67 - 130	2	30
Carbon tetrachloride			5.00	5.266		ug/L		105	64 - 141	2	30
Chlorobenzene			5.00	5.126		ug/L		103	80 - 120	2	30
Chloroethane			5.00	5.060		ug/L		101	63 - 120	1	30
Chloroform			5.00	5.516		ug/L		110	80 - 120	2	30
Chloromethane			5.00	4.873		ug/L		97	56 - 124	3	30
cis-1,2-Dichloroethene			5.00	5.546		ug/L		111	80 - 122	0	30
cis-1,3-Dichloropropene			5.00	5.165		ug/L		103	67 - 121	1	30
Dibromochloromethane			5.00	5.400		ug/L		108	64 - 138	2	30
Ethylbenzene			5.00	5.047		ug/L		101	80 - 120	2	30
Freon 113			5.00	5.036		ug/L		101	75 - 133	1	30
m&p-Xylene			10.0	10.15		ug/L		101	80 - 120	2	30
Methylene Chloride			5.00	5.299		ug/L		106	80 - 120	1	30
o-Xylene			5.00	4.969		ug/L		99	80 - 120	0	30
Styrene			5.00	5.116		ug/L		102	80 - 120	1	30
Tetrachloroethene			5.00	5.048		ug/L		101	80 - 120	1	30
Toluene			5.00	5.160		ug/L		103	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	5.207		ug/L		104	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	5.076		ug/L		102	61 - 129	1	30
Trichloroethene			5.00	5.212		ug/L		104	80 - 120	2	30

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

Lab Sample ID: LCSD 410-34120/6
Matrix: Water
Analysis Batch: 34120

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	5.668		ug/L		113	62 - 136	1	30
Vinyl chloride			5.00	5.045		ug/L		101	60 - 125	0	30

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

Lab Sample ID: LCSD 410-34120/8
Matrix: Water
Analysis Batch: 34120

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	12.34		ug/L		99	38 - 145	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-33216/1-A
Matrix: Water
Analysis Batch: 33222

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33216

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/14/20 08:53	08/14/20 10:24	1
Ethane (1C)	5.00	U	5.00		ug/L		08/14/20 08:53	08/14/20 10:24	1
Ethene (1C)	5.00	U	5.00		ug/L		08/14/20 08:53	08/14/20 10:24	1
Methane (1C)	5.00	U	5.00		ug/L		08/14/20 08:53	08/14/20 10:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*96*		*28 - 140*	*08/14/20 08:53*	*08/14/20 10:24*	*1*

Lab Sample ID: LCS 410-33216/2-A
Matrix: Water
Analysis Batch: 33222

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33216

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acetylene (1C)			51.2	47.28		ug/L		92	57 - 146		
Ethane (1C)			59.4	53.47		ug/L		90	85 - 115		
Ethene (1C)			60.4	55.45		ug/L		92	83 - 115		
Methane (1C)			59.4	58.46		ug/L		98	85 - 115		

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 410-33216/2-A
Matrix: Water
Analysis Batch: 33222

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33216

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*95*		*28 - 140*

Lab Sample ID: LCSD 410-33216/3-A
Matrix: Water
Analysis Batch: 33222

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 33216

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetylene (1C)			51.2	46.57		ug/L		91	57 - 146	2	20
Ethane (1C)			59.4	53.88		ug/L		91	85 - 115	1	20
Ethene (1C)			60.4	55.73		ug/L		92	83 - 115	1	20
Methane (1C)			59.4	58.30		ug/L		98	85 - 115	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*96*		*28 - 140*

Lab Sample ID: MB 410-33545/1-A
Matrix: Water
Analysis Batch: 33566

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33545

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:11	08/15/20 11:08	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:11	08/15/20 11:08	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:11	08/15/20 11:08	1
Methane (1C)	5.00	U	5.00		ug/L		08/15/20 10:11	08/15/20 11:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*101*		*28 - 140*	*08/15/20 10:11*	*08/15/20 11:08*	*1*

Lab Sample ID: LCS 410-33545/2-A
Matrix: Water
Analysis Batch: 33566

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33545

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acetylene (1C)			51.2	54.80		ug/L		107	57 - 146		
Ethane (1C)			59.4	60.08		ug/L		101	85 - 115		
Ethene (1C)			60.4	61.19		ug/L		101	83 - 115		
Methane (1C)			59.4	63.89		ug/L		108	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*105*		*28 - 140*

Lab Sample ID: LCSD 410-33545/3-A
Matrix: Water
Analysis Batch: 33566

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 33545

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetylene (1C)			51.2	53.75		ug/L		105	57 - 146	2	20
Ethane (1C)			59.4	56.97		ug/L		96	85 - 115	5	20

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 410-33545/3-A
Matrix: Water
Analysis Batch: 33566

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 33545

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethene (1C)			60.4	58.85		ug/L		97	83 - 115	4	20
Methane (1C)			59.4	61.81		ug/L		104	85 - 115	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*102*		*28 - 140*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-33879/4
Matrix: Water
Analysis Batch: 33879

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			08/17/20 15:49	1

Lab Sample ID: LCS 410-33879/3
Matrix: Water
Analysis Batch: 33879

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.890		mg/L		105	90 - 110		

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-34844/5
Matrix: Water
Analysis Batch: 34844

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			08/18/20 15:19	1

Lab Sample ID: LCS 410-34844/4
Matrix: Water
Analysis Batch: 34844

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	24.18		mg/L		97	91 - 113		

GC/MS VOA

Analysis Batch: 34120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10433-1	DP1-0820	Total/NA	Water	8260C LL	
410-10433-2	Trip blanks	Total/NA	Water	8260C LL	
MB 410-34120/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-34120/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-34120/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-34120/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-34120/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

GC VOA

Prep Batch: 33216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10433-1	DP1-0820	Total/NA	Water	RSK-175	
MB 410-33216/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-33216/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-33216/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 33222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10433-1	DP1-0820	Total/NA	Water	RSK-175	33216
MB 410-33216/1-A	Method Blank	Total/NA	Water	RSK-175	33216
LCS 410-33216/2-A	Lab Control Sample	Total/NA	Water	RSK-175	33216
LCSD 410-33216/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	33216

Prep Batch: 33545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10433-1 - DL	DP1-0820	Total/NA	Water	RSK-175	
MB 410-33545/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-33545/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-33545/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 33566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10433-1 - DL	DP1-0820	Total/NA	Water	RSK-175	33545
MB 410-33545/1-A	Method Blank	Total/NA	Water	RSK-175	33545
LCS 410-33545/2-A	Lab Control Sample	Total/NA	Water	RSK-175	33545
LCSD 410-33545/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	33545

HPLC/IC

Analysis Batch: 33879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10433-1	DP1-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-33879/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-33879/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

General Chemistry

Analysis Batch: 34844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10433-1	DP1-0820	Total/NA	Water	5310C-2011	
MB 410-34844/5	Method Blank	Total/NA	Water	5310C-2011	

General Chemistry (Continued)

Analysis Batch: 34844 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-34844/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10433-1

Client Sample ID: DP1-0820

Lab Sample ID: 410-10433-1

Date Collected: 08/11/20 14:55

Matrix: Water

Date Received: 08/12/20 11:14

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	34120	08/18/20 04:08	MJ8R	ELLE
Total/NA	Prep	RSK-175	DL		33545	08/15/20 10:11	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	100	33566	08/15/20 15:00	IYN5	ELLE
Total/NA	Prep	RSK-175			33216	08/14/20 08:53	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	33222	08/14/20 11:56	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	33879	08/17/20 16:57	GJ35	ELLE
Total/NA	Analysis	5310C-2011		5	34844	08/18/20 20:42	KGQ6	ELLE

Client Sample ID: Trip blanks

Lab Sample ID: 410-10433-2

Date Collected: 08/11/20 00:00

Matrix: Water

Date Received: 08/12/20 11:14

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	34120	08/17/20 23:26	MJ8R	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: 410-10433-1
Project/Site: Boeing of Portland/0025116.120.412

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
5310C-2011		Water	Total Organic Carbon
8260C LL		Water	1,1,1-Trichloroethane
8260C LL		Water	1,1,2,2-Tetrachloroethane
8260C LL		Water	1,1,2-Trichloroethane
8260C LL		Water	1,1-Dichloroethane
8260C LL		Water	1,1-Dichloroethene
8260C LL		Water	1,2-Dichloroethane
8260C LL		Water	1,2-Dichloropropane
8260C LL		Water	2-Butanone
8260C LL		Water	2-Hexanone
8260C LL		Water	4-Methyl-2-pentanone
8260C LL		Water	Acetone
8260C LL		Water	Benzene
8260C LL		Water	Bromodichloromethane
8260C LL		Water	Bromoform
8260C LL		Water	Bromomethane
8260C LL		Water	Carbon disulfide
8260C LL		Water	Carbon tetrachloride
8260C LL		Water	Chlorobenzene
8260C LL		Water	Chloroethane
8260C LL		Water	Chloroform
8260C LL		Water	Chloromethane
8260C LL		Water	cis-1,2-Dichloroethene
8260C LL		Water	cis-1,3-Dichloropropene
8260C LL		Water	Dibromochloromethane
8260C LL		Water	Ethylbenzene
8260C LL		Water	Freon 113
8260C LL		Water	m&p-Xylene
8260C LL		Water	Methylene Chloride
8260C LL		Water	o-Xylene
8260C LL		Water	Styrene
8260C LL		Water	Tetrachloroethene
8260C LL		Water	Toluene
8260C LL		Water	trans-1,2-Dichloroethene
8260C LL		Water	trans-1,3-Dichloropropene
8260C LL		Water	Trichloroethene
8260C LL		Water	Trichlorofluoromethane
8260C LL		Water	Vinyl acetate
8260C LL		Water	Vinyl chloride
EPA 300.0 R2.1		Water	Sulfate
RSK-175	RSK-175	Water	Ethane (1C)
RSK-175	RSK-175	Water	Ethene (1C)
RSK-175	RSK-175	Water	Methane (1C)

Method Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10433-1

Method	Method Description	Protocol	Laboratory
8260C LL	Volatile Organic Compounds by GC/MS	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
5030C	Purge and Trap	SW846	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

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.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10433-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-10433-1	DP1-0820	Water	08/11/20 14:55	08/12/20 11:14	
410-10433-2	Trip blanks	Water	08/11/20 00:00	08/12/20 11:14	

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-10433 Chain of Custody

nental use only

ispond.

1 Client Information

Site Location: Gresham, Oregon
Site Project: Boeing - Portland
Site Program/#: 025116.120.412
Boeing PM: Debbie Taege
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL # of Coolers: 1

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	4 Analyses Requested: VOC (38 list)	TOC	Sulfate	AMEE	5 Remarks/Comments
DP1-0820	8/11/20	14:55	H_2O	9	X	X	X	X	
Trip blanks	—	—	H_2O	2*	X				Trip blanks shared w/ samples in cooler

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. [illegible]	8/11 16:45		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time 8/12/20 1114

Relinquished by commercial carrier (circle): UPS FedEx Other: _____
Temperature upon Receipt: 0.8 °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.

9/11/2020

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 410-10433-1

Login Number: 10433
List Number: 1
Creator: Rivera-Santa, Julissa

List Source: Eurofins Lancaster Laboratories Env

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.	True	
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	

eurofins | Environment Testing America



ANALYTICAL REPORT

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

Laboratory Job ID: 410-10700-1
Client Project/Site: Boeing of Portland/0025116.120.412

For:
Landau & Associates, Inc.
Sound View Plaza, 130 2nd Ave S
Edmonds, Washington 98020-9129

Attn: Chris Kimmel

Authorized for release by:
9/15/2020 12:37:27 PM

Kay Hower, Principal Project Manager
(717)556-7364
kayhower@eurofinsus.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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 recoveries that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result.
* 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 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. 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 LANACASTER 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. 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.



Kay Hower
Principal Project Manager
9/15/2020 12:37:27 PM

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 6
Detection Summary 7
Client Sample Results 10
Surrogate Summary 27
QC Sample Results 29
QC Association Summary 42
Lab Chronicle 46
Certification Summary 49
Method Summary 50
Sample Summary 51
Chain of Custody 52
Receipt Checklists 56

Definitions/Glossary

Client: Landau & Associates, Inc. Job ID: 410-10700-1
Project/Site: Boeing of Portland/0025116.120.412

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
E	Result exceeded calibration range.
X	Surrogate recovery exceeds control limits

GC VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

Metals

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

General Chemistry

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL.
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

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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: 410-10700-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-10700-1

Receipt
The samples were received on 8/14/2020 11:36 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.2º C.

GC/MS VOA
Method 8260C LL: Internal standard (ISTD) response for the following sample was outside control limits: E-11-0820 (410-10700-5). The sample(s) was re-extracted and/or re-analyzed and ISTD response was outside control limits.

Method 8260C LL: The continuing calibration verification (CCV) associated with batch 410-37329 recovered outside acceptance criteria, low biased, for Bromomethane and Vinyl chloride. 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.

Method 8260C LL: The method requirement for no headspace was not met on analytical batch 410-37329. Due to the need for re-analysis, the container used for the following sample was previously opened and contained headspace: E-11-0820 (410-10700-5). The original sample container did not contain headspace. Significant headspace is defined as a bubble greater than 6 mm in diameter.

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

HPLC/IC
Method 300.0: Due to laboratory error, sample(s) were analyzed at the standard dilution factor of 5 instead of client requesting dilution factor of 1 for Nitrate and Sulfate. The following samples were re-analyzed at the correct dilution factor outside of the analytical holding time: E-3-0820 (410-10700-2), E-12-0820 (410-10700-6), E-15-0820 (410-10700-7) and E-16-0820 (410-10700-8).

Method 300.0: The following samples were analyzed outside of analytical holding time for Nitrate due to a scheduling error: E-2-0820 (410-10700-1), E-3-0820 (410-10700-2), E-4-0820 (410-10700-3), E-11-0820 (410-10700-5), E-12-0820 (410-10700-6), E-15-0820 (410-10700-7) and E-16-0820 (410-10700-8).

Method 300.0: The following sample was analyzed outside of analytical holding time for Nitrite due to a scheduling error: E-12-0820 (410-10700-6).

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

GC VOA
Method RSK-175: The continuing calibration verification (CCV) associated with batch 410-33556 recovered above the upper control limit for Acetylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: E-4-0820 (410-10700-3), E-11-0820 (410-10700-5), E-12-0820 (410-10700-6), E-15-0820 (410-10700-7) and E-16-0820 (410-10700-8).

Method RSK-175: The method requirement for no headspace was not met. The following volatile sample was analyzed at a dilution with significant headspace in the sample container(s): E-3-0820 (410-10700-2). Significant headspace is defined as a bubble greater than 6 mm in diameter.

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

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

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

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

Detection Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10700-1

Client Sample ID: E-2-0820 — Lab Sample ID: 410-10700-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Methane (1C)	553	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	697		25.0		ug/L	5		RSK-175	Total/NA
Sulfate	1.33	H	1.00		mg/L	1		EPA 300.0 R2.1	Total/NA
Iron	5.90		0.200		mg/L	1		6010D	Total Recoverable
Iron	4.36		0.206		mg/L	1		6010D	Dissolved
Total Organic Carbon	1.68		1.00		mg/L	1		5310C-2011	Total/NA

Client Sample ID: E-3-0820 — Lab Sample ID: 410-10700-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.38		0.20	0.060	ug/L	1		8260C LL	Total/NA
2-Butanone	50		5.0	0.60	ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	1.6		0.20	0.050	ug/L	1		8260C LL	Total/NA
Toluene	4.1		0.20	0.070	ug/L	1		8260C LL	Total/NA
Trichloroethene	2.0		0.20	0.060	ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.57		0.20	0.10	ug/L	1		8260C LL	Total/NA
Methane (1C)	16500	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	22700		500		ug/L	100		RSK-175	Total/NA
Iron	11.3		0.200		mg/L	1		6010D	Total Recoverable
Iron	11.7		0.206		mg/L	1		6010D	Dissolved
Total Organic Carbon	53.2		1.00		mg/L	1		5310C-2011	Total/NA

Client Sample ID: E-4-0820 — Lab Sample ID: 410-10700-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	2.9		0.20	0.060	ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	2.1		0.20	0.050	ug/L	1		8260C LL	Total/NA
Tetrachloroethene	0.67		0.20	0.060	ug/L	1		8260C LL	Total/NA
Trichloroethene	18		0.20	0.060	ug/L	1		8260C LL	Total/NA
Methane (1C)	240		5.00		ug/L	1		RSK-175	Total/NA
Nitrogen, Nitrate	0.240	H	0.100		mg/L	1		EPA 300.0 R2.1	Total/NA
Sulfate	3.89	H	1.00		mg/L	1		EPA 300.0 R2.1	Total/NA
Iron	0.306		0.200		mg/L	1		6010D	Total Recoverable
Iron	0.263		0.206		mg/L	1		6010D	Dissolved

Client Sample ID: E-8-0820 — Lab Sample ID: 410-10700-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Chloroform	0.28		0.20	0.090	ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	2.4		0.20	0.050	ug/L	1		8260C LL	Total/NA
Tetrachloroethene	32	E	0.20	0.060	ug/L	1		8260C LL	Total/NA
Trichloroethene	9.3		0.20	0.060	ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	2.4		2.0	0.50	ug/L	10		8260C LL	Total/NA
Tetrachloroethene - DL	29		2.0	0.60	ug/L	10		8260C LL	Total/NA
Trichloroethene - DL	8.7		2.0	0.60	ug/L	10		8260C LL	Total/NA

Client Sample ID: E-11-0820 — Lab Sample ID: 410-10700-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	11		5.0	0.60	ug/L	1		8260C LL	Total/NA
2-Hexanone	5.7		5.0	0.60	ug/L	1		8260C LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: E-11-0820 (Continued)
Lab Sample ID: 410-10700-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	290	E	5.0	0.90	ug/L	1		8260C LL	Total/NA
Benzene	0.21		0.20	0.050	ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	0.36		0.20	0.050	ug/L	1		8260C LL	Total/NA
Toluene	19		0.20	0.070	ug/L	1		8260C LL	Total/NA
Acetone - DL	220	*3	50	9.0	ug/L	10		8260C LL	Total/NA
Toluene - DL	18		2.0	0.70	ug/L	10		8260C LL	Total/NA
Acetone - RADL	260	*3	50	9.0	ug/L	10		8260C LL	Total/NA
Toluene - RADL	22		2.0	0.70	ug/L	10		8260C LL	Total/NA
Methane (1C)	8080	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	11000		250		ug/L	50		RSK-175	Total/NA
Total Organic Carbon	108		10.0		mg/L	10		5310C-2011	Total/NA

Client Sample ID: E-12-0820
Lab Sample ID: 410-10700-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	1.3		0.20	0.060	ug/L	1		8260C LL	Total/NA
2-Butanone	12		5.0	0.60	ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	5.8		0.20	0.050	ug/L	1		8260C LL	Total/NA
Tetrachloroethene	0.24		0.20	0.060	ug/L	1		8260C LL	Total/NA
Toluene	0.99		0.20	0.070	ug/L	1		8260C LL	Total/NA
Trichloroethene	7.4		0.20	0.060	ug/L	1		8260C LL	Total/NA
Vinyl chloride	1.1		0.20	0.10	ug/L	1		8260C LL	Total/NA
Methane (1C)	4770	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	6140		250		ug/L	50		RSK-175	Total/NA
Sulfate	7.42		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	5.24	H	1.00		mg/L	1		EPA 300.0 R2.1	Total/NA
Total Organic Carbon	18.7		1.00		mg/L	1		5310C-2011	Total/NA

Client Sample ID: E-15-0820
Lab Sample ID: 410-10700-7

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.28		0.20	0.060	ug/L	1		8260C LL	Total/NA
2-Butanone	66		5.0	0.60	ug/L	1		8260C LL	Total/NA
Acetone	5.0		5.0	0.90	ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	3.1		0.20	0.050	ug/L	1		8260C LL	Total/NA
Toluene	0.49		0.20	0.070	ug/L	1		8260C LL	Total/NA
Trichloroethene	0.52		0.20	0.060	ug/L	1		8260C LL	Total/NA
Vinyl chloride	2.1		0.20	0.10	ug/L	1		8260C LL	Total/NA
Methane (1C)	9910	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	13900		250		ug/L	50		RSK-175	Total/NA
Sulfate	1.60	H	1.00		mg/L	1		EPA 300.0 R2.1	Total/NA
Total Organic Carbon	167		10.0		mg/L	10		5310C-2011	Total/NA

Client Sample ID: E-16-0820
Lab Sample ID: 410-10700-8

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.51		0.20	0.060	ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	0.86		0.20	0.050	ug/L	1		8260C LL	Total/NA
Trichloroethene	1.1		0.20	0.060	ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.83		0.20	0.10	ug/L	1		8260C LL	Total/NA
Methane (1C)	5520	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	8090		250		ug/L	50		RSK-175	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Landau & Associates, Inc.
Job ID: 410-10700-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: E-16-0820 (Continued)
Lab Sample ID: 410-10700-8

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Sulfate	1.85	H F1	1.00		mg/L	1		EPA 300.0 R2.1	Total/NA
Total Organic Carbon	5.50		1.00		mg/L	1		5310C-2011	Total/NA

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10700-15

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: E-2-0820

Date Collected: 08/12/20 16:00
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-1

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	<0.50		0.50	0.060	ug/L			08/24/20 13:37	1
1,1,2,2-Tetrachloroethane	<0.20		0.20	0.070	ug/L			08/24/20 13:37	1
1,1,2-Trichloroethane	<0.20		0.20	0.060	ug/L			08/24/20 13:37	1
1,1-Dichloroethane	<0.50		0.50	0.070	ug/L			08/24/20 13:37	1
1,1-Dichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 13:37	1
1,2-Dichloroethane	<0.20		0.20	0.050	ug/L			08/24/20 13:37	1
1,2-Dichloropropane	<0.50		0.50	0.060	ug/L			08/24/20 13:37	1
2-Butanone	<5.0		5.0	0.60	ug/L			08/24/20 13:37	1
2-Hexanone	<5.0		5.0	0.60	ug/L			08/24/20 13:37	1
4-Methyl-2-pentanone	<5.0		5.0	0.70	ug/L			08/24/20 13:37	1
Acetone	<5.0		5.0	0.90	ug/L			08/24/20 13:37	1
Benzene	<0.20		0.20	0.050	ug/L			08/24/20 13:37	1
Bromodichloromethane	<0.50		0.50	0.050	ug/L			08/24/20 13:37	1
Bromoform	<1.0		1.0	0.30	ug/L			08/24/20 13:37	1
Bromomethane	<0.50		0.50	0.070	ug/L			08/24/20 13:37	1
Carbon disulfide	<0.50		0.50	0.060	ug/L			08/24/20 13:37	1
Carbon tetrachloride	<0.20		0.20	0.070	ug/L			08/24/20 13:37	1
Chlorobenzene	<0.50		0.50	0.060	ug/L			08/24/20 13:37	1
Chloroethane	<0.50		0.50	0.070	ug/L			08/24/20 13:37	1
Chloroform	<0.20		0.20	0.090	ug/L			08/24/20 13:37	1
Chloromethane	<0.50		0.50	0.060	ug/L			08/24/20 13:37	1
cis-1,2-Dichloroethene	<0.20		0.20	0.050	ug/L			08/24/20 13:37	1
cis-1,3-Dichloropropene	<0.20		0.20	0.050	ug/L			08/24/20 13:37	1
Dibromochloromethane	<0.50		0.50	0.070	ug/L			08/24/20 13:37	1
Ethylbenzene	<0.50		0.50	0.060	ug/L			08/24/20 13:37	1
Freon 113	<0.50		0.50	0.060	ug/L			08/24/20 13:37	1
m&p-Xylene	<0.50		0.50	0.10	ug/L			08/24/20 13:37	1
Methylene Chloride	<0.50		0.50	0.070	ug/L			08/24/20 13:37	1
o-Xylene	<0.50		0.50	0.050	ug/L			08/24/20 13:37	1
Styrene	<0.50		0.50	0.050	ug/L			08/24/20 13:37	1
Tetrachloroethene	<0.20		0.20	0.060	ug/L			08/24/20 13:37	1
Toluene	<0.20		0.20	0.070	ug/L			08/24/20 13:37	1
trans-1,2-Dichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 13:37	1
trans-1,3-Dichloropropene	<0.20		0.20	0.060	ug/L			08/24/20 13:37	1
Trichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 13:37	1
Trichlorofluoromethane	<0.50		0.50	0.050	ug/L			08/24/20 13:37	1
Vinyl acetate	<0.50		0.50	0.040	ug/L			08/24/20 13:37	1
Vinyl chloride	<0.20		0.20	0.10	ug/L			08/24/20 13:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*08/24/20 13:37*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/24/20 13:37*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*08/24/20 13:37*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*08/24/20 13:37*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 13:15	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 13:15	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 13:15	1

Client Sample ID: E-2-0820

Date Collected: 08/12/20 16:00
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-1

Matrix: Water

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**553**	**E**	5.00		ug/L		08/15/20 10:04	08/15/20 13:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*86*		*28 - 140*	*08/15/20 10:04*	*08/15/20 13:15*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	25.0	U	25.0		ug/L		08/17/20 08:59	08/17/20 16:20	5
Ethane (1C)	25.0	U	25.0		ug/L		08/17/20 08:59	08/17/20 16:20	5
Ethene (1C)	25.0	U	25.0		ug/L		08/17/20 08:59	08/17/20 16:20	5
Methane (1C)	**697**		25.0		ug/L		08/17/20 08:59	08/17/20 16:20	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*82*		*28 - 140*	*08/17/20 08:59*	*08/17/20 16:20*	*5*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U H	0.100		mg/L			09/12/20 13:55	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**1.33**	**H**	1.00		mg/L			09/12/20 13:55	1

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**5.90**		0.200		mg/L		08/15/20 11:10	08/20/20 20:56	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**4.36**		0.206		mg/L		08/15/20 14:12	08/17/20 23:09	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1.68**		1.00		mg/L			08/19/20 16:02	1

Client Sample ID: E-3-0820

Date Collected: 08/12/20 11:50
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-2

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	<0.50		0.50	0.060	ug/L			08/24/20 13:58	1
1,1,2,2-Tetrachloroethane	<0.20		0.20	0.070	ug/L			08/24/20 13:58	1
1,1,2-Trichloroethane	<0.20		0.20	0.060	ug/L			08/24/20 13:58	1
1,1-Dichloroethane	<0.50		0.50	0.070	ug/L			08/24/20 13:58	1
1,1-Dichloroethene	**0.38**		0.20	0.060	ug/L			08/24/20 13:58	1
1,2-Dichloroethane	<0.20		0.20	0.050	ug/L			08/24/20 13:58	1
1,2-Dichloropropane	<0.50		0.50	0.060	ug/L			08/24/20 13:58	1
2-Butanone	**50**		5.0	0.60	ug/L			08/24/20 13:58	1
2-Hexanone	<5.0		5.0	0.60	ug/L			08/24/20 13:58	1
4-Methyl-2-pentanone	<5.0		5.0	0.70	ug/L			08/24/20 13:58	1
Acetone	<5.0		5.0	0.90	ug/L			08/24/20 13:58	1

Client: Landau & Associates, Inc.
Job ID: 410-10700-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: E-3-0820
Lab Sample ID: 410-10700-2
Date Collected: 08/12/20 11:50
Matrix: Water
Date Received: 08/14/20 11:36

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.20		0.20	0.050	ug/L			08/24/20 13:58	1
Bromodichloromethane	<0.50		0.50	0.050	ug/L			08/24/20 13:58	1
Bromoform	<1.0		1.0	0.30	ug/L			08/24/20 13:58	1
Bromomethane	<0.50		0.50	0.070	ug/L			08/24/20 13:58	1
Carbon disulfide	<0.50		0.50	0.060	ug/L			08/24/20 13:58	1
Carbon tetrachloride	<0.20		0.20	0.070	ug/L			08/24/20 13:58	1
Chlorobenzene	<0.50		0.50	0.060	ug/L			08/24/20 13:58	1
Chloroethane	<0.50		0.50	0.070	ug/L			08/24/20 13:58	1
Chloroform	<0.20		0.20	0.090	ug/L			08/24/20 13:58	1
Chloromethane	<0.50		0.50	0.060	ug/L			08/24/20 13:58	1
cis-1,2-Dichloroethene	**1.6**		0.20	0.050	ug/L			08/24/20 13:58	1
cis-1,3-Dichloropropene	<0.20		0.20	0.050	ug/L			08/24/20 13:58	1
Dibromochloromethane	<0.50		0.50	0.070	ug/L			08/24/20 13:58	1
Ethylbenzene	<0.50		0.50	0.060	ug/L			08/24/20 13:58	1
Freon 113	<0.50		0.50	0.060	ug/L			08/24/20 13:58	1
m&p-Xylene	<0.50		0.50	0.10	ug/L			08/24/20 13:58	1
Methylene Chloride	<0.50		0.50	0.070	ug/L			08/24/20 13:58	1
o-Xylene	<0.50		0.50	0.050	ug/L			08/24/20 13:58	1
Styrene	<0.50		0.50	0.050	ug/L			08/24/20 13:58	1
Tetrachloroethene	<0.20		0.20	0.060	ug/L			08/24/20 13:58	1
Toluene	**4.1**		0.20	0.070	ug/L			08/24/20 13:58	1
trans-1,2-Dichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 13:58	1
trans-1,3-Dichloropropene	<0.20		0.20	0.060	ug/L			08/24/20 13:58	1
Trichloroethene	**2.0**		0.20	0.060	ug/L			08/24/20 13:58	1
Trichlorofluoromethane	<0.50		0.50	0.050	ug/L			08/24/20 13:58	1
Vinyl acetate	<0.50		0.50	0.040	ug/L			08/24/20 13:58	1
Vinyl chloride	**0.57**		0.20	0.10	ug/L			08/24/20 13:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*08/24/20 13:58*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/24/20 13:58*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*08/24/20 13:58*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*08/24/20 13:58*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 13:33	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 13:33	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 13:33	1
Methane (1C)	**16500**	**E**	5.00		ug/L		08/15/20 10:04	08/15/20 13:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*74*		*28 - 140*	*08/15/20 10:04*	*08/15/20 13:33*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	500	U	500		ug/L		08/17/20 08:59	08/17/20 16:38	100
Ethane (1C)	500	U	500		ug/L		08/17/20 08:59	08/17/20 16:38	100
Ethene (1C)	500	U	500		ug/L		08/17/20 08:59	08/17/20 16:38	100
Methane (1C)	**22700**		500		ug/L		08/17/20 08:59	08/17/20 16:38	100

Client Sample ID: E-3-0820

Date Collected: 08/12/20 11:50
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-2
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*84*		*28 - 140*	*08/17/20 08:59*	*08/17/20 16:38*	*100*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.500	U H	0.500		mg/L			08/19/20 01:14	5
Nitrogen, Nitrate	0.100	U H	0.100		mg/L			09/12/20 12:43	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.00	U F1	5.00		mg/L			08/19/20 01:14	5
Sulfate	1.00	U H	1.00		mg/L			09/12/20 12:43	1

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**11.3**		0.200		mg/L		08/15/20 11:10	08/20/20 20:53	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**11.7**		0.206		mg/L		08/15/20 14:12	08/17/20 23:12	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**53.2**		1.00		mg/L			08/19/20 17:08	1

Client Sample ID: E-4-0820

Date Collected: 08/12/20 10:30
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-3
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	<0.50		0.50	0.060	ug/L			08/24/20 14:20	1
1,1,2,2-Tetrachloroethane	<0.20		0.20	0.070	ug/L			08/24/20 14:20	1
1,1,2-Trichloroethane	<0.20		0.20	0.060	ug/L			08/24/20 14:20	1
1,1-Dichloroethane	<0.50		0.50	0.070	ug/L			08/24/20 14:20	1
1,1-Dichloroethene	**2.9**		0.20	0.060	ug/L			08/24/20 14:20	1
1,2-Dichloroethane	<0.20		0.20	0.050	ug/L			08/24/20 14:20	1
1,2-Dichloropropane	<0.50		0.50	0.060	ug/L			08/24/20 14:20	1
2-Butanone	<5.0		5.0	0.60	ug/L			08/24/20 14:20	1
2-Hexanone	<5.0		5.0	0.60	ug/L			08/24/20 14:20	1
4-Methyl-2-pentanone	<5.0		5.0	0.70	ug/L			08/24/20 14:20	1
Acetone	<5.0		5.0	0.90	ug/L			08/24/20 14:20	1
Benzene	<0.20		0.20	0.050	ug/L			08/24/20 14:20	1
Bromodichloromethane	<0.50		0.50	0.050	ug/L			08/24/20 14:20	1
Bromoform	<1.0		1.0	0.30	ug/L			08/24/20 14:20	1
Bromomethane	<0.50		0.50	0.070	ug/L			08/24/20 14:20	1
Carbon disulfide	<0.50		0.50	0.060	ug/L			08/24/20 14:20	1
Carbon tetrachloride	<0.20		0.20	0.070	ug/L			08/24/20 14:20	1
Chlorobenzene	<0.50		0.50	0.060	ug/L			08/24/20 14:20	1
Chloroethane	<0.50		0.50	0.070	ug/L			08/24/20 14:20	1
Chloroform	<0.20		0.20	0.090	ug/L			08/24/20 14:20	1
Chloromethane	<0.50		0.50	0.060	ug/L			08/24/20 14:20	1
cis-1,2-Dichloroethene	**2.1**		0.20	0.050	ug/L			08/24/20 14:20	1

Client Sample ID: E-4-0820

Date Collected: 08/12/20 10:30
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-3

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	<0.20		0.20	0.050	ug/L			08/24/20 14:20	1
Dibromochloromethane	<0.50		0.50	0.070	ug/L			08/24/20 14:20	1
Ethylbenzene	<0.50		0.50	0.060	ug/L			08/24/20 14:20	1
Freon 113	<0.50		0.50	0.060	ug/L			08/24/20 14:20	1
m&p-Xylene	<0.50		0.50	0.10	ug/L			08/24/20 14:20	1
Methylene Chloride	<0.50		0.50	0.070	ug/L			08/24/20 14:20	1
o-Xylene	<0.50		0.50	0.050	ug/L			08/24/20 14:20	1
Styrene	<0.50		0.50	0.050	ug/L			08/24/20 14:20	1
Tetrachloroethene	**0.67**		0.20	0.060	ug/L			08/24/20 14:20	1
Toluene	<0.20		0.20	0.070	ug/L			08/24/20 14:20	1
trans-1,2-Dichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 14:20	1
trans-1,3-Dichloropropene	<0.20		0.20	0.060	ug/L			08/24/20 14:20	1
Trichloroethene	**18**		0.20	0.060	ug/L			08/24/20 14:20	1
Trichlorofluoromethane	<0.50		0.50	0.050	ug/L			08/24/20 14:20	1
Vinyl acetate	<0.50		0.50	0.040	ug/L			08/24/20 14:20	1
Vinyl chloride	<0.20		0.20	0.10	ug/L			08/24/20 14:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/24/20 14:20*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*08/24/20 14:20*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*08/24/20 14:20*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*08/24/20 14:20*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 14:13	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 14:13	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 14:13	1
Methane (1C)	**240**		5.00		ug/L		08/15/20 10:04	08/15/20 14:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*84*		*28 - 140*	*08/15/20 10:04*	*08/15/20 14:13*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**0.240**	**H**	0.100		mg/L			09/12/20 12:07	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**3.89**	**H**	1.00		mg/L			09/12/20 12:07	1

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.306**		0.200		mg/L		08/15/20 11:10	08/20/20 20:50	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.263**		0.206		mg/L		08/15/20 14:12	08/17/20 23:15	1

Client Sample ID: E-4-0820

Date Collected: 08/12/20 10:30
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-3

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			08/19/20 17:22	1

Client Sample ID: E-8-0820

Date Collected: 08/12/20 15:20
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-4

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	<0.50		0.50	0.060	ug/L			08/24/20 14:41	1
1,1,2,2-Tetrachloroethane	<0.20		0.20	0.070	ug/L			08/24/20 14:41	1
1,1,2-Trichloroethane	<0.20		0.20	0.060	ug/L			08/24/20 14:41	1
1,1-Dichloroethane	<0.50		0.50	0.070	ug/L			08/24/20 14:41	1
1,1-Dichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 14:41	1
1,2-Dichloroethane	<0.20		0.20	0.050	ug/L			08/24/20 14:41	1
1,2-Dichloropropane	<0.50		0.50	0.060	ug/L			08/24/20 14:41	1
2-Butanone	<5.0		5.0	0.60	ug/L			08/24/20 14:41	1
2-Hexanone	<5.0		5.0	0.60	ug/L			08/24/20 14:41	1
4-Methyl-2-pentanone	<5.0		5.0	0.70	ug/L			08/24/20 14:41	1
Acetone	<5.0		5.0	0.90	ug/L			08/24/20 14:41	1
Benzene	<0.20		0.20	0.050	ug/L			08/24/20 14:41	1
Bromodichloromethane	<0.50		0.50	0.050	ug/L			08/24/20 14:41	1
Bromoform	<1.0		1.0	0.30	ug/L			08/24/20 14:41	1
Bromomethane	<0.50		0.50	0.070	ug/L			08/24/20 14:41	1
Carbon disulfide	<0.50		0.50	0.060	ug/L			08/24/20 14:41	1
Carbon tetrachloride	<0.20		0.20	0.070	ug/L			08/24/20 14:41	1
Chlorobenzene	<0.50		0.50	0.060	ug/L			08/24/20 14:41	1
Chloroethane	<0.50		0.50	0.070	ug/L			08/24/20 14:41	1
Chloroform	**0.28**		0.20	0.090	ug/L			08/24/20 14:41	1
Chloromethane	<0.50		0.50	0.060	ug/L			08/24/20 14:41	1
cis-1,2-Dichloroethene	**2.4**		0.20	0.050	ug/L			08/24/20 14:41	1
cis-1,3-Dichloropropene	<0.20		0.20	0.050	ug/L			08/24/20 14:41	1
Dibromochloromethane	<0.50		0.50	0.070	ug/L			08/24/20 14:41	1
Ethylbenzene	<0.50		0.50	0.060	ug/L			08/24/20 14:41	1
Freon 113	<0.50		0.50	0.060	ug/L			08/24/20 14:41	1
m&p-Xylene	<0.50		0.50	0.10	ug/L			08/24/20 14:41	1
Methylene Chloride	<0.50		0.50	0.070	ug/L			08/24/20 14:41	1
o-Xylene	<0.50		0.50	0.050	ug/L			08/24/20 14:41	1
Styrene	<0.50		0.50	0.050	ug/L			08/24/20 14:41	1
Tetrachloroethene	**32**	**E**	0.20	0.060	ug/L			08/24/20 14:41	1
Toluene	<0.20		0.20	0.070	ug/L			08/24/20 14:41	1
trans-1,2-Dichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 14:41	1
trans-1,3-Dichloropropene	<0.20		0.20	0.060	ug/L			08/24/20 14:41	1
Trichloroethene	**9.3**		0.20	0.060	ug/L			08/24/20 14:41	1
Trichlorofluoromethane	<0.50		0.50	0.050	ug/L			08/24/20 14:41	1
Vinyl acetate	<0.50		0.50	0.040	ug/L			08/24/20 14:41	1
Vinyl chloride	<0.20		0.20	0.10	ug/L			08/24/20 14:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*08/24/20 14:41*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*08/24/20 14:41*	*1*

Client Sample ID: E-8-0820
Date Collected: 08/12/20 15:20
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-4
Matrix: Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*08/24/20 14:41*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*08/24/20 14:41*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<5.0		5.0	0.60	ug/L			08/26/20 16:47	10
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.70	ug/L			08/26/20 16:47	10
1,1,2-Trichloroethane	<2.0		2.0	0.60	ug/L			08/26/20 16:47	10
1,1-Dichloroethane	<5.0		5.0	0.70	ug/L			08/26/20 16:47	10
1,1-Dichloroethene	<2.0		2.0	0.60	ug/L			08/26/20 16:47	10
1,2-Dichloroethane	<2.0		2.0	0.50	ug/L			08/26/20 16:47	10
1,2-Dichloropropane	<5.0		5.0	0.60	ug/L			08/26/20 16:47	10
2-Butanone	<50		50	6.0	ug/L			08/26/20 16:47	10
2-Hexanone	<50		50	6.0	ug/L			08/26/20 16:47	10
4-Methyl-2-pentanone	<50		50	7.0	ug/L			08/26/20 16:47	10
Acetone	<50		50	9.0	ug/L			08/26/20 16:47	10
Benzene	<2.0		2.0	0.50	ug/L			08/26/20 16:47	10
Bromodichloromethane	<5.0		5.0	0.50	ug/L			08/26/20 16:47	10
Bromoform	<10		10	3.0	ug/L			08/26/20 16:47	10
Bromomethane	<5.0		5.0	0.70	ug/L			08/26/20 16:47	10
Carbon disulfide	<5.0		5.0	0.60	ug/L			08/26/20 16:47	10
Carbon tetrachloride	<2.0		2.0	0.70	ug/L			08/26/20 16:47	10
Chlorobenzene	<5.0		5.0	0.60	ug/L			08/26/20 16:47	10
Chloroethane	<5.0		5.0	0.70	ug/L			08/26/20 16:47	10
Chloroform	<2.0		2.0	0.90	ug/L			08/26/20 16:47	10
Chloromethane	<5.0		5.0	0.60	ug/L			08/26/20 16:47	10
cis-1,2-Dichloroethene	**2.4**		2.0	0.50	ug/L			08/26/20 16:47	10
cis-1,3-Dichloropropene	<2.0		2.0	0.50	ug/L			08/26/20 16:47	10
Dibromochloromethane	<5.0		5.0	0.70	ug/L			08/26/20 16:47	10
Ethylbenzene	<5.0		5.0	0.60	ug/L			08/26/20 16:47	10
Freon 113	<5.0		5.0	0.60	ug/L			08/26/20 16:47	10
m&p-Xylene	<5.0		5.0	1.0	ug/L			08/26/20 16:47	10
Methylene Chloride	<5.0		5.0	0.70	ug/L			08/26/20 16:47	10
o-Xylene	<5.0		5.0	0.50	ug/L			08/26/20 16:47	10
Styrene	<5.0		5.0	0.50	ug/L			08/26/20 16:47	10
Tetrachloroethene	**29**		2.0	0.60	ug/L			08/26/20 16:47	10
Toluene	<2.0		2.0	0.70	ug/L			08/26/20 16:47	10
trans-1,2-Dichloroethene	<2.0		2.0	0.60	ug/L			08/26/20 16:47	10
trans-1,3-Dichloropropene	<2.0		2.0	0.60	ug/L			08/26/20 16:47	10
Trichloroethene	**8.7**		2.0	0.60	ug/L			08/26/20 16:47	10
Trichlorofluoromethane	<5.0		5.0	0.50	ug/L			08/26/20 16:47	10
Vinyl acetate	<5.0		5.0	0.40	ug/L			08/26/20 16:47	10
Vinyl chloride	<2.0		2.0	1.0	ug/L			08/26/20 16:47	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*08/26/20 16:47*	*10*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/26/20 16:47*	*10*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*08/26/20 16:47*	*10*
Toluene-d8 (Surr)	*106*		*80 - 120*		*08/26/20 16:47*	*10*

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10700-1

Client Sample ID: E-11-0820

Date Collected: 08/12/20 14:20
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-5

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	<0.50		0.50	0.060	ug/L			08/24/20 18:34	1
1,1,2,2-Tetrachloroethane	<0.20		0.20	0.070	ug/L			08/24/20 18:34	1
1,1,2-Trichloroethane	<0.20		0.20	0.060	ug/L			08/24/20 18:34	1
1,1-Dichloroethane	<0.50		0.50	0.070	ug/L			08/24/20 18:34	1
1,1-Dichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 18:34	1
1,2-Dichloroethane	<0.20		0.20	0.050	ug/L			08/24/20 18:34	1
1,2-Dichloropropane	<0.50		0.50	0.060	ug/L			08/24/20 18:34	1
2-Butanone	**11**		5.0	0.60	ug/L			08/24/20 18:34	1
2-Hexanone	**5.7**		5.0	0.60	ug/L			08/24/20 18:34	1
4-Methyl-2-pentanone	<5.0		5.0	0.70	ug/L			08/24/20 18:34	1
Acetone	**290**	**E**	5.0	0.90	ug/L			08/24/20 18:34	1
Benzene	**0.21**		0.20	0.050	ug/L			08/24/20 18:34	1
Bromodichloromethane	<0.50		0.50	0.050	ug/L			08/24/20 18:34	1
Bromoform	<1.0		1.0	0.30	ug/L			08/24/20 18:34	1
Bromomethane	<0.50		0.50	0.070	ug/L			08/24/20 18:34	1
Carbon disulfide	<0.50		0.50	0.060	ug/L			08/24/20 18:34	1
Carbon tetrachloride	<0.20		0.20	0.070	ug/L			08/24/20 18:34	1
Chlorobenzene	<0.50		0.50	0.060	ug/L			08/24/20 18:34	1
Chloroethane	<0.50		0.50	0.070	ug/L			08/24/20 18:34	1
Chloroform	<0.20		0.20	0.090	ug/L			08/24/20 18:34	1
Chloromethane	<0.50		0.50	0.060	ug/L			08/24/20 18:34	1
cis-1,2-Dichloroethene	**0.36**		0.20	0.050	ug/L			08/24/20 18:34	1
cis-1,3-Dichloropropene	<0.20		0.20	0.050	ug/L			08/24/20 18:34	1
Dibromochloromethane	<0.50		0.50	0.070	ug/L			08/24/20 18:34	1
Ethylbenzene	<0.50		0.50	0.060	ug/L			08/24/20 18:34	1
Freon 113	<0.50		0.50	0.060	ug/L			08/24/20 18:34	1
m&p-Xylene	<0.50		0.50	0.10	ug/L			08/24/20 18:34	1
Methylene Chloride	<0.50		0.50	0.070	ug/L			08/24/20 18:34	1
o-Xylene	<0.50		0.50	0.050	ug/L			08/24/20 18:34	1
Styrene	<0.50		0.50	0.050	ug/L			08/24/20 18:34	1
Tetrachloroethene	<0.20		0.20	0.060	ug/L			08/24/20 18:34	1
Toluene	**19**		0.20	0.070	ug/L			08/24/20 18:34	1
trans-1,2-Dichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 18:34	1
trans-1,3-Dichloropropene	<0.20		0.20	0.060	ug/L			08/24/20 18:34	1
Trichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 18:34	1
Trichlorofluoromethane	<0.50		0.50	0.050	ug/L			08/24/20 18:34	1
Vinyl acetate	<0.50		0.50	0.040	ug/L			08/24/20 18:34	1
Vinyl chloride	<0.20		0.20	0.10	ug/L			08/24/20 18:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*08/24/20 18:34*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*08/24/20 18:34*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*08/24/20 18:34*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*08/24/20 18:34*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<5.0		5.0	0.60	ug/L			08/24/20 18:55	10
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.70	ug/L			08/24/20 18:55	10
1,1,2-Trichloroethane	<2.0		2.0	0.60	ug/L			08/24/20 18:55	10

Client Sample ID: E-11-0820
Date Collected: 08/12/20 14:20
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-5
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	<5.0		5.0	0.70	ug/L			08/24/20 18:55	10
1,1-Dichloroethene	<2.0		2.0	0.60	ug/L			08/24/20 18:55	10
1,2-Dichloroethane	<2.0		2.0	0.50	ug/L			08/24/20 18:55	10
1,2-Dichloropropane	<5.0		5.0	0.60	ug/L			08/24/20 18:55	10
2-Butanone	<50	*3	50	6.0	ug/L			08/24/20 18:55	10
2-Hexanone	<50	*3	50	6.0	ug/L			08/24/20 18:55	10
4-Methyl-2-pentanone	<50	*3	50	7.0	ug/L			08/24/20 18:55	10
Acetone	**220**	***3**	50	9.0	ug/L			08/24/20 18:55	10
Benzene	<2.0		2.0	0.50	ug/L			08/24/20 18:55	10
Bromodichloromethane	<5.0		5.0	0.50	ug/L			08/24/20 18:55	10
Bromoform	<10		10	3.0	ug/L			08/24/20 18:55	10
Bromomethane	<5.0		5.0	0.70	ug/L			08/24/20 18:55	10
Carbon disulfide	<5.0		5.0	0.60	ug/L			08/24/20 18:55	10
Carbon tetrachloride	<2.0		2.0	0.70	ug/L			08/24/20 18:55	10
Chlorobenzene	<5.0		5.0	0.60	ug/L			08/24/20 18:55	10
Chloroethane	<5.0		5.0	0.70	ug/L			08/24/20 18:55	10
Chloroform	<2.0		2.0	0.90	ug/L			08/24/20 18:55	10
Chloromethane	<5.0		5.0	0.60	ug/L			08/24/20 18:55	10
cis-1,2-Dichloroethene	<2.0		2.0	0.50	ug/L			08/24/20 18:55	10
cis-1,3-Dichloropropene	<2.0		2.0	0.50	ug/L			08/24/20 18:55	10
Dibromochloromethane	<5.0		5.0	0.70	ug/L			08/24/20 18:55	10
Ethylbenzene	<5.0		5.0	0.60	ug/L			08/24/20 18:55	10
Freon 113	<5.0		5.0	0.60	ug/L			08/24/20 18:55	10
m&p-Xylene	<5.0		5.0	1.0	ug/L			08/24/20 18:55	10
Methylene Chloride	<5.0		5.0	0.70	ug/L			08/24/20 18:55	10
o-Xylene	<5.0		5.0	0.50	ug/L			08/24/20 18:55	10
Styrene	<5.0		5.0	0.50	ug/L			08/24/20 18:55	10
Tetrachloroethene	<2.0		2.0	0.60	ug/L			08/24/20 18:55	10
Toluene	**18**		2.0	0.70	ug/L			08/24/20 18:55	10
trans-1,2-Dichloroethene	<2.0		2.0	0.60	ug/L			08/24/20 18:55	10
trans-1,3-Dichloropropene	<2.0		2.0	0.60	ug/L			08/24/20 18:55	10
Trichloroethene	<2.0		2.0	0.60	ug/L			08/24/20 18:55	10
Trichlorofluoromethane	<5.0		5.0	0.50	ug/L			08/24/20 18:55	10
Vinyl acetate	<5.0		5.0	0.40	ug/L			08/24/20 18:55	10
Vinyl chloride	<2.0		2.0	1.0	ug/L			08/24/20 18:55	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*08/24/20 18:55*	*10*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*08/24/20 18:55*	*10*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*08/24/20 18:55*	*10*
Toluene-d8 (Surr)	*103*		*80 - 120*		*08/24/20 18:55*	*10*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<5.0		5.0	0.60	ug/L			08/26/20 17:09	10
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.70	ug/L			08/26/20 17:09	10
1,1,2-Trichloroethane	<2.0		2.0	0.60	ug/L			08/26/20 17:09	10
1,1-Dichloroethane	<5.0		5.0	0.70	ug/L			08/26/20 17:09	10
1,1-Dichloroethene	<2.0		2.0	0.60	ug/L			08/26/20 17:09	10
1,2-Dichloroethane	<2.0		2.0	0.50	ug/L			08/26/20 17:09	10

Client Sample ID: E-11-0820

Date Collected: 08/12/20 14:20
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-5

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	<5.0		5.0	0.60	ug/L			08/26/20 17:09	10
2-Butanone	<50	*3	50	6.0	ug/L			08/26/20 17:09	10
2-Hexanone	<50	*3	50	6.0	ug/L			08/26/20 17:09	10
4-Methyl-2-pentanone	<50	*3	50	7.0	ug/L			08/26/20 17:09	10
Acetone	**260**	***3**	50	9.0	ug/L			08/26/20 17:09	10
Benzene	<2.0		2.0	0.50	ug/L			08/26/20 17:09	10
Bromodichloromethane	<5.0		5.0	0.50	ug/L			08/26/20 17:09	10
Bromoform	<10		10	3.0	ug/L			08/26/20 17:09	10
Bromomethane	<5.0		5.0	0.70	ug/L			08/26/20 17:09	10
Carbon disulfide	<5.0		5.0	0.60	ug/L			08/26/20 17:09	10
Carbon tetrachloride	<2.0		2.0	0.70	ug/L			08/26/20 17:09	10
Chlorobenzene	<5.0		5.0	0.60	ug/L			08/26/20 17:09	10
Chloroethane	<5.0		5.0	0.70	ug/L			08/26/20 17:09	10
Chloroform	<2.0		2.0	0.90	ug/L			08/26/20 17:09	10
Chloromethane	<5.0		5.0	0.60	ug/L			08/26/20 17:09	10
cis-1,2-Dichloroethene	<2.0		2.0	0.50	ug/L			08/26/20 17:09	10
cis-1,3-Dichloropropene	<2.0		2.0	0.50	ug/L			08/26/20 17:09	10
Dibromochloromethane	<5.0		5.0	0.70	ug/L			08/26/20 17:09	10
Ethylbenzene	<5.0		5.0	0.60	ug/L			08/26/20 17:09	10
Freon 113	<5.0		5.0	0.60	ug/L			08/26/20 17:09	10
m&p-Xylene	<5.0		5.0	1.0	ug/L			08/26/20 17:09	10
Methylene Chloride	<5.0		5.0	0.70	ug/L			08/26/20 17:09	10
o-Xylene	<5.0		5.0	0.50	ug/L			08/26/20 17:09	10
Styrene	<5.0		5.0	0.50	ug/L			08/26/20 17:09	10
Tetrachloroethene	<2.0		2.0	0.60	ug/L			08/26/20 17:09	10
Toluene	**22**		2.0	0.70	ug/L			08/26/20 17:09	10
trans-1,2-Dichloroethene	<2.0		2.0	0.60	ug/L			08/26/20 17:09	10
trans-1,3-Dichloropropene	<2.0		2.0	0.60	ug/L			08/26/20 17:09	10
Trichloroethene	<2.0		2.0	0.60	ug/L			08/26/20 17:09	10
Trichlorofluoromethane	<5.0		5.0	0.50	ug/L			08/26/20 17:09	10
Vinyl acetate	<5.0		5.0	0.40	ug/L			08/26/20 17:09	10
Vinyl chloride	<2.0		2.0	1.0	ug/L			08/26/20 17:09	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*08/26/20 17:09*	*10*
Dibromofluoromethane (Surr)	*107*		*80 - 120*		*08/26/20 17:09*	*10*
4-Bromofluorobenzene (Surr)	*123*	*X*	*80 - 120*		*08/26/20 17:09*	*10*
Toluene-d8 (Surr)	*128*	*X*	*80 - 120*		*08/26/20 17:09*	*10*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 14:32	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 14:32	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 14:32	1
Methane (1C)	**8080**	**E**	5.00		ug/L		08/15/20 10:04	08/15/20 14:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*76*		*28 - 140*	*08/15/20 10:04*	*08/15/20 14:32*	*1*

Client Sample ID: E-11-0820

Date Collected: 08/12/20 14:20
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-5

Matrix: Water

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	250	U	250		ug/L		08/17/20 08:59	08/17/20 16:56	50
Ethane (1C)	250	U	250		ug/L		08/17/20 08:59	08/17/20 16:56	50
Ethene (1C)	250	U	250		ug/L		08/17/20 08:59	08/17/20 16:56	50
Methane (1C)	**11000**		250		ug/L		08/17/20 08:59	08/17/20 16:56	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*86*		*28 - 140*	*08/17/20 08:59*	*08/17/20 16:56*	*50*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U H	0.100		mg/L			09/12/20 13:01	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U H	1.00		mg/L			09/12/20 13:01	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**108**		10.0		mg/L			08/20/20 16:40	10

Client Sample ID: E-12-0820

Date Collected: 08/12/20 11:15
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-6

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	<0.50		0.50	0.060	ug/L			08/24/20 15:02	1
1,1,2,2-Tetrachloroethane	<0.20		0.20	0.070	ug/L			08/24/20 15:02	1
1,1,2-Trichloroethane	<0.20		0.20	0.060	ug/L			08/24/20 15:02	1
1,1-Dichloroethane	<0.50		0.50	0.070	ug/L			08/24/20 15:02	1
1,1-Dichloroethene	**1.3**		0.20	0.060	ug/L			08/24/20 15:02	1
1,2-Dichloroethane	<0.20		0.20	0.050	ug/L			08/24/20 15:02	1
1,2-Dichloropropane	<0.50		0.50	0.060	ug/L			08/24/20 15:02	1
2-Butanone	**12**		5.0	0.60	ug/L			08/24/20 15:02	1
2-Hexanone	<5.0		5.0	0.60	ug/L			08/24/20 15:02	1
4-Methyl-2-pentanone	<5.0		5.0	0.70	ug/L			08/24/20 15:02	1
Acetone	<5.0		5.0	0.90	ug/L			08/24/20 15:02	1
Benzene	<0.20		0.20	0.050	ug/L			08/24/20 15:02	1
Bromodichloromethane	<0.50		0.50	0.050	ug/L			08/24/20 15:02	1
Bromoform	<1.0		1.0	0.30	ug/L			08/24/20 15:02	1
Bromomethane	<0.50		0.50	0.070	ug/L			08/24/20 15:02	1
Carbon disulfide	<0.50		0.50	0.060	ug/L			08/24/20 15:02	1
Carbon tetrachloride	<0.20		0.20	0.070	ug/L			08/24/20 15:02	1
Chlorobenzene	<0.50		0.50	0.060	ug/L			08/24/20 15:02	1
Chloroethane	<0.50		0.50	0.070	ug/L			08/24/20 15:02	1
Chloroform	<0.20		0.20	0.090	ug/L			08/24/20 15:02	1
Chloromethane	<0.50		0.50	0.060	ug/L			08/24/20 15:02	1
cis-1,2-Dichloroethene	**5.8**		0.20	0.050	ug/L			08/24/20 15:02	1
cis-1,3-Dichloropropene	<0.20		0.20	0.050	ug/L			08/24/20 15:02	1
Dibromochloromethane	<0.50		0.50	0.070	ug/L			08/24/20 15:02	1
Ethylbenzene	<0.50		0.50	0.060	ug/L			08/24/20 15:02	1

Client Sample ID: E-12-0820

Date Collected: 08/12/20 11:15
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-6

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Freon 113	<0.50		0.50	0.060	ug/L			08/24/20 15:02	1
m&p-Xylene	<0.50		0.50	0.10	ug/L			08/24/20 15:02	1
Methylene Chloride	<0.50		0.50	0.070	ug/L			08/24/20 15:02	1
o-Xylene	<0.50		0.50	0.050	ug/L			08/24/20 15:02	1
Styrene	<0.50		0.50	0.050	ug/L			08/24/20 15:02	1
Tetrachloroethene	**0.24**		0.20	0.060	ug/L			08/24/20 15:02	1
Toluene	**0.99**		0.20	0.070	ug/L			08/24/20 15:02	1
trans-1,2-Dichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 15:02	1
trans-1,3-Dichloropropene	<0.20		0.20	0.060	ug/L			08/24/20 15:02	1
Trichloroethene	**7.4**		0.20	0.060	ug/L			08/24/20 15:02	1
Trichlorofluoromethane	<0.50		0.50	0.050	ug/L			08/24/20 15:02	1
Vinyl acetate	<0.50		0.50	0.040	ug/L			08/24/20 15:02	1
Vinyl chloride	**1.1**		0.20	0.10	ug/L			08/24/20 15:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/24/20 15:02*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*08/24/20 15:02*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*08/24/20 15:02*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*08/24/20 15:02*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 14:50	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 14:50	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 14:50	1
Methane (1C)	**4770**	**E**	5.00		ug/L		08/15/20 10:04	08/15/20 14:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*85*		*28 - 140*	*08/15/20 10:04*	*08/15/20 14:50*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	250	U	250		ug/L		08/17/20 09:03	08/17/20 18:27	50
Ethane (1C)	250	U	250		ug/L		08/17/20 09:03	08/17/20 18:27	50
Ethene (1C)	250	U	250		ug/L		08/17/20 09:03	08/17/20 18:27	50
Methane (1C)	**6140**		250		ug/L		08/17/20 09:03	08/17/20 18:27	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*68*		*28 - 140*	*08/17/20 09:03*	*08/17/20 18:27*	*50*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.500	U H	0.500		mg/L			08/19/20 05:32	5
Nitrogen, Nitrate	0.100	U H	0.100		mg/L			09/12/20 12:25	1
Nitrogen, Nitrite	0.500	U H	0.500		mg/L			08/19/20 05:32	5
Nitrogen, Nitrite	0.100	U H	0.100		mg/L			09/12/20 12:25	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**7.42**		5.00		mg/L			08/19/20 05:32	5
Sulfate	**5.24**	**H**	1.00		mg/L			09/12/20 12:25	1

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10700-1

Client Sample ID: E-12-0820

Date Collected: 08/12/20 11:15
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-6

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**18.7**		1.00		mg/L			08/19/20 18:15	1

Client Sample ID: E-15-0820

Date Collected: 08/12/20 09:40
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-7

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	<0.50		0.50	0.060	ug/L			08/24/20 15:23	1
1,1,2,2-Tetrachloroethane	<0.20		0.20	0.070	ug/L			08/24/20 15:23	1
1,1,2-Trichloroethane	<0.20		0.20	0.060	ug/L			08/24/20 15:23	1
1,1-Dichloroethane	<0.50		0.50	0.070	ug/L			08/24/20 15:23	1
1,1-Dichloroethene	**0.28**		0.20	0.060	ug/L			08/24/20 15:23	1
1,2-Dichloroethane	<0.20		0.20	0.050	ug/L			08/24/20 15:23	1
1,2-Dichloropropane	<0.50		0.50	0.060	ug/L			08/24/20 15:23	1
2-Butanone	**66**		5.0	0.60	ug/L			08/24/20 15:23	1
2-Hexanone	<5.0		5.0	0.60	ug/L			08/24/20 15:23	1
4-Methyl-2-pentanone	<5.0		5.0	0.70	ug/L			08/24/20 15:23	1
Acetone	**5.0**		5.0	0.90	ug/L			08/24/20 15:23	1
Benzene	<0.20		0.20	0.050	ug/L			08/24/20 15:23	1
Bromodichloromethane	<0.50		0.50	0.050	ug/L			08/24/20 15:23	1
Bromoform	<1.0		1.0	0.30	ug/L			08/24/20 15:23	1
Bromomethane	<0.50		0.50	0.070	ug/L			08/24/20 15:23	1
Carbon disulfide	<0.50		0.50	0.060	ug/L			08/24/20 15:23	1
Carbon tetrachloride	<0.20		0.20	0.070	ug/L			08/24/20 15:23	1
Chlorobenzene	<0.50		0.50	0.060	ug/L			08/24/20 15:23	1
Chloroethane	<0.50		0.50	0.070	ug/L			08/24/20 15:23	1
Chloroform	<0.20		0.20	0.090	ug/L			08/24/20 15:23	1
Chloromethane	<0.50		0.50	0.060	ug/L			08/24/20 15:23	1
cis-1,2-Dichloroethene	**3.1**		0.20	0.050	ug/L			08/24/20 15:23	1
cis-1,3-Dichloropropene	<0.20		0.20	0.050	ug/L			08/24/20 15:23	1
Dibromochloromethane	<0.50		0.50	0.070	ug/L			08/24/20 15:23	1
Ethylbenzene	<0.50		0.50	0.060	ug/L			08/24/20 15:23	1
Freon 113	<0.50		0.50	0.060	ug/L			08/24/20 15:23	1
m&p-Xylene	<0.50		0.50	0.10	ug/L			08/24/20 15:23	1
Methylene Chloride	<0.50		0.50	0.070	ug/L			08/24/20 15:23	1
o-Xylene	<0.50		0.50	0.050	ug/L			08/24/20 15:23	1
Styrene	<0.50		0.50	0.050	ug/L			08/24/20 15:23	1
Tetrachloroethene	<0.20		0.20	0.060	ug/L			08/24/20 15:23	1
Toluene	**0.49**		0.20	0.070	ug/L			08/24/20 15:23	1
trans-1,2-Dichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 15:23	1
trans-1,3-Dichloropropene	<0.20		0.20	0.060	ug/L			08/24/20 15:23	1
Trichloroethene	**0.52**		0.20	0.060	ug/L			08/24/20 15:23	1
Trichlorofluoromethane	<0.50		0.50	0.050	ug/L			08/24/20 15:23	1
Vinyl acetate	<0.50		0.50	0.040	ug/L			08/24/20 15:23	1
Vinyl chloride	**2.1**		0.20	0.10	ug/L			08/24/20 15:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/24/20 15:23*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/24/20 15:23*	*1*

Client Sample ID: E-15-0820

Date Collected: 08/12/20 09:40
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-7

Matrix: Water

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*08/24/20 15:23*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*08/24/20 15:23*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 15:07	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 15:07	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 15:07	1
Methane (1C)	**9910**	**E**	5.00		ug/L		08/15/20 10:04	08/15/20 15:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*83*		*28 - 140*	*08/15/20 10:04*	*08/15/20 15:07*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	250	U	250		ug/L		08/17/20 09:03	08/17/20 18:45	50
Ethane (1C)	250	U	250		ug/L		08/17/20 09:03	08/17/20 18:45	50
Ethene (1C)	250	U	250		ug/L		08/17/20 09:03	08/17/20 18:45	50
Methane (1C)	**13900**		250		ug/L		08/17/20 09:03	08/17/20 18:45	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*72*		*28 - 140*	*08/17/20 09:03*	*08/17/20 18:45*	*50*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.500	U H	0.500		mg/L			08/19/20 06:06	5
Nitrogen, Nitrate	0.100	U H	0.100		mg/L			09/12/20 11:49	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.00	U	5.00		mg/L			08/19/20 06:06	5
Sulfate	**1.60**	**H**	1.00		mg/L			09/12/20 11:49	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**167**		10.0		mg/L			08/20/20 17:34	10

Client Sample ID: E-16-0820

Date Collected: 08/12/20 09:10
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-8

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	<0.50		0.50	0.060	ug/L			08/24/20 15:45	1
1,1,2,2-Tetrachloroethane	<0.20		0.20	0.070	ug/L			08/24/20 15:45	1
1,1,2-Trichloroethane	<0.20		0.20	0.060	ug/L			08/24/20 15:45	1
1,1-Dichloroethane	<0.50		0.50	0.070	ug/L			08/24/20 15:45	1
1,1-Dichloroethene	**0.51**		0.20	0.060	ug/L			08/24/20 15:45	1
1,2-Dichloroethane	<0.20		0.20	0.050	ug/L			08/24/20 15:45	1
1,2-Dichloropropane	<0.50		0.50	0.060	ug/L			08/24/20 15:45	1
2-Butanone	<5.0		5.0	0.60	ug/L			08/24/20 15:45	1

Client Sample ID: E-16-0820
Date Collected: 08/12/20 09:10
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-8
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	<5.0		5.0	0.60	ug/L			08/24/20 15:45	1
4-Methyl-2-pentanone	<5.0		5.0	0.70	ug/L			08/24/20 15:45	1
Acetone	<5.0		5.0	0.90	ug/L			08/24/20 15:45	1
Benzene	<0.20		0.20	0.050	ug/L			08/24/20 15:45	1
Bromodichloromethane	<0.50		0.50	0.050	ug/L			08/24/20 15:45	1
Bromoform	<1.0		1.0	0.30	ug/L			08/24/20 15:45	1
Bromomethane	<0.50		0.50	0.070	ug/L			08/24/20 15:45	1
Carbon disulfide	<0.50		0.50	0.060	ug/L			08/24/20 15:45	1
Carbon tetrachloride	<0.20		0.20	0.070	ug/L			08/24/20 15:45	1
Chlorobenzene	<0.50		0.50	0.060	ug/L			08/24/20 15:45	1
Chloroethane	<0.50		0.50	0.070	ug/L			08/24/20 15:45	1
Chloroform	<0.20		0.20	0.090	ug/L			08/24/20 15:45	1
Chloromethane	<0.50		0.50	0.060	ug/L			08/24/20 15:45	1
cis-1,2-Dichloroethene	**0.86**		0.20	0.050	ug/L			08/24/20 15:45	1
cis-1,3-Dichloropropene	<0.20		0.20	0.050	ug/L			08/24/20 15:45	1
Dibromochloromethane	<0.50		0.50	0.070	ug/L			08/24/20 15:45	1
Ethylbenzene	<0.50		0.50	0.060	ug/L			08/24/20 15:45	1
Freon 113	<0.50		0.50	0.060	ug/L			08/24/20 15:45	1
m&p-Xylene	<0.50		0.50	0.10	ug/L			08/24/20 15:45	1
Methylene Chloride	<0.50		0.50	0.070	ug/L			08/24/20 15:45	1
o-Xylene	<0.50		0.50	0.050	ug/L			08/24/20 15:45	1
Styrene	<0.50		0.50	0.050	ug/L			08/24/20 15:45	1
Tetrachloroethene	<0.20		0.20	0.060	ug/L			08/24/20 15:45	1
Toluene	<0.20		0.20	0.070	ug/L			08/24/20 15:45	1
trans-1,2-Dichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 15:45	1
trans-1,3-Dichloropropene	<0.20		0.20	0.060	ug/L			08/24/20 15:45	1
Trichloroethene	**1.1**		0.20	0.060	ug/L			08/24/20 15:45	1
Trichlorofluoromethane	<0.50		0.50	0.050	ug/L			08/24/20 15:45	1
Vinyl acetate	<0.50		0.50	0.040	ug/L			08/24/20 15:45	1
Vinyl chloride	**0.83**		0.20	0.10	ug/L			08/24/20 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*08/24/20 15:45*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/24/20 15:45*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*08/24/20 15:45*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*08/24/20 15:45*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 15:25	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 15:25	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 15:25	1
Methane (1C)	**5520**	**E**	5.00		ug/L		08/15/20 10:04	08/15/20 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*84*		*28 - 140*	*08/15/20 10:04*	*08/15/20 15:25*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	250	U	250		ug/L		08/17/20 09:03	08/17/20 19:04	50

Client Sample ID: E-16-0820

Date Collected: 08/12/20 09:10
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-8

Matrix: Water

Method: RSK-175 - Dissolved Gases (GC) - DL (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	250	U	250		ug/L		08/17/20 09:03	08/17/20 19:04	50
Ethene (1C)	250	U	250		ug/L		08/17/20 09:03	08/17/20 19:04	50
Methane (1C)	**8090**		250		ug/L		08/17/20 09:03	08/17/20 19:04	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*72*		*28 - 140*	*08/17/20 09:03*	*08/17/20 19:04*	*50*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.500	U H	0.500		mg/L			08/19/20 05:49	5
Nitrogen, Nitrate	0.100	U H F1	0.100		mg/L			09/12/20 10:55	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.00	U	5.00		mg/L			08/19/20 05:49	5
Sulfate	**1.85**	**H F1**	1.00		mg/L			09/12/20 10:55	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**5.50**		1.00		mg/L			08/19/20 18:42	1

Client Sample ID: Trip Blanks

Date Collected: 08/12/20 00:00
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-15

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	<0.50		0.50	0.060	ug/L			08/24/20 12:34	1
1,1,2,2-Tetrachloroethane	<0.20		0.20	0.070	ug/L			08/24/20 12:34	1
1,1,2-Trichloroethane	<0.20		0.20	0.060	ug/L			08/24/20 12:34	1
1,1-Dichloroethane	<0.50		0.50	0.070	ug/L			08/24/20 12:34	1
1,1-Dichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 12:34	1
1,2-Dichloroethane	<0.20		0.20	0.050	ug/L			08/24/20 12:34	1
1,2-Dichloropropane	<0.50		0.50	0.060	ug/L			08/24/20 12:34	1
2-Butanone	<5.0		5.0	0.60	ug/L			08/24/20 12:34	1
2-Hexanone	<5.0		5.0	0.60	ug/L			08/24/20 12:34	1
4-Methyl-2-pentanone	<5.0		5.0	0.70	ug/L			08/24/20 12:34	1
Acetone	<5.0		5.0	0.90	ug/L			08/24/20 12:34	1
Benzene	<0.20		0.20	0.050	ug/L			08/24/20 12:34	1
Bromodichloromethane	<0.50		0.50	0.050	ug/L			08/24/20 12:34	1
Bromoform	<1.0		1.0	0.30	ug/L			08/24/20 12:34	1
Bromomethane	<0.50		0.50	0.070	ug/L			08/24/20 12:34	1
Carbon disulfide	<0.50		0.50	0.060	ug/L			08/24/20 12:34	1
Carbon tetrachloride	<0.20		0.20	0.070	ug/L			08/24/20 12:34	1
Chlorobenzene	<0.50		0.50	0.060	ug/L			08/24/20 12:34	1
Chloroethane	<0.50		0.50	0.070	ug/L			08/24/20 12:34	1
Chloroform	<0.20		0.20	0.090	ug/L			08/24/20 12:34	1
Chloromethane	<0.50		0.50	0.060	ug/L			08/24/20 12:34	1
cis-1,2-Dichloroethene	<0.20		0.20	0.050	ug/L			08/24/20 12:34	1
cis-1,3-Dichloropropene	<0.20		0.20	0.050	ug/L			08/24/20 12:34	1
Dibromochloromethane	<0.50		0.50	0.070	ug/L			08/24/20 12:34	1

Client: Landau & Associates, Inc.
Job ID: 410-10700-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10700-15

Date Collected: 08/12/20 00:00
Matrix: Water
Date Received: 08/14/20 11:36

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.50		0.50	0.060	ug/L			08/24/20 12:34	1
Freon 113	<0.50		0.50	0.060	ug/L			08/24/20 12:34	1
m&p-Xylene	<0.50		0.50	0.10	ug/L			08/24/20 12:34	1
Methylene Chloride	<0.50		0.50	0.070	ug/L			08/24/20 12:34	1
o-Xylene	<0.50		0.50	0.050	ug/L			08/24/20 12:34	1
Styrene	<0.50		0.50	0.050	ug/L			08/24/20 12:34	1
Tetrachloroethene	<0.20		0.20	0.060	ug/L			08/24/20 12:34	1
Toluene	<0.20		0.20	0.070	ug/L			08/24/20 12:34	1
trans-1,2-Dichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 12:34	1
trans-1,3-Dichloropropene	<0.20		0.20	0.060	ug/L			08/24/20 12:34	1
Trichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 12:34	1
Trichlorofluoromethane	<0.50		0.50	0.050	ug/L			08/24/20 12:34	1
Vinyl acetate	<0.50		0.50	0.040	ug/L			08/24/20 12:34	1
Vinyl chloride	<0.20		0.20	0.10	ug/L			08/24/20 12:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*08/24/20 12:34*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*08/24/20 12:34*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*08/24/20 12:34*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*08/24/20 12:34*	*1*

Surrogate Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10700-1

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)
410-10700-1	E-2-0820	103	102	103	101
410-10700-2	E-3-0820	100	102	104	103
410-10700-3	E-4-0820	102	100	104	102
410-10700-4	E-8-0820	101	103	105	101
410-10700-4 - DL	E-8-0820	99	102	104	106
410-10700-5	E-11-0820	99	98	102	103
410-10700-5 - DL	E-11-0820	98	101	103	103
410-10700-5 - RADL	E-11-0820	101	107	123 X	128 X
410-10700-6	E-12-0820	102	101	104	102
410-10700-7	E-15-0820	102	102	104	103
410-10700-8	E-16-0820	100	102	105	103
410-10700-15	Trip Blanks	103	103	102	101
LCS 410-36419/5	Lab Control Sample	101	103	104	102
LCS 410-36419/7	Lab Control Sample	103	103	104	99
LCS 410-37329/5	Lab Control Sample	98	100	110	106
LCS 410-37329/7	Lab Control Sample	100	104	102	112
LCSD 410-36419/6	Lab Control Sample Dup	98	102	106	103
LCSD 410-36419/8	Lab Control Sample Dup	100	102	104	100
LCSD 410-37329/6	Lab Control Sample Dup	102	104	125 X	109
LCSD 410-37329/8	Lab Control Sample Dup	97	102	98	99
MB 410-36419/10	Method Blank	102	102	105	102
MB 410-37329/10	Method Blank	102	102	112	89

Surrogate Legend

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

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		Propene1
Lab Sample ID	Client Sample ID	(28-140)
410-10700-1	E-2-0820	86
410-10700-1 - DL	E-2-0820	82
410-10700-2	E-3-0820	74
410-10700-2 - DL	E-3-0820	84
410-10700-3	E-4-0820	84
410-10700-5	E-11-0820	76
410-10700-5 - DL	E-11-0820	86
410-10700-6	E-12-0820	85
410-10700-6 - DL	E-12-0820	68
410-10700-7	E-15-0820	83
410-10700-7 - DL	E-15-0820	72
410-10700-8	E-16-0820	84
410-10700-8 - DL	E-16-0820	72
LCS 410-33541/2-A	Lab Control Sample	97
LCS 410-33890/2-A	Lab Control Sample	92

Surrogate Summary

Client: Landau & Associates, Inc.
Job ID: 410-10700-1
Project/Site: Boeing of Portland/0025116.120.412

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Propene1 (28-140)								
LCS 410-33896/2-A	Lab Control Sample	93								
LCSD 410-33541/3-A	Lab Control Sample Dup	96								
LCSD 410-33890/3-A	Lab Control Sample Dup	97								
LCSD 410-33896/3-A	Lab Control Sample Dup	91								
MB 410-33541/1-A	Method Blank	91								
MB 410-33890/1-A	Method Blank	97								
MB 410-33896/1-A	Method Blank	94								

Surrogate Legend

Propene = Propene

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

Lab Sample ID: MB 410-36419/10
Matrix: Water
Analysis Batch: 36419

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	<0.50		0.50	0.060	ug/L			08/24/20 12:13	1
1,1,2,2-Tetrachloroethane	<0.20		0.20	0.070	ug/L			08/24/20 12:13	1
1,1,2-Trichloroethane	<0.20		0.20	0.060	ug/L			08/24/20 12:13	1
1,1-Dichloroethane	<0.50		0.50	0.070	ug/L			08/24/20 12:13	1
1,1-Dichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 12:13	1
1,2-Dichloroethane	<0.20		0.20	0.050	ug/L			08/24/20 12:13	1
1,2-Dichloropropane	<0.50		0.50	0.060	ug/L			08/24/20 12:13	1
2-Butanone	<5.0		5.0	0.60	ug/L			08/24/20 12:13	1
2-Hexanone	<5.0		5.0	0.60	ug/L			08/24/20 12:13	1
4-Methyl-2-pentanone	<5.0		5.0	0.70	ug/L			08/24/20 12:13	1
Acetone	<5.0		5.0	0.90	ug/L			08/24/20 12:13	1
Benzene	<0.20		0.20	0.050	ug/L			08/24/20 12:13	1
Bromodichloromethane	<0.50		0.50	0.050	ug/L			08/24/20 12:13	1
Bromoform	<1.0		1.0	0.30	ug/L			08/24/20 12:13	1
Bromomethane	<0.50		0.50	0.070	ug/L			08/24/20 12:13	1
Carbon disulfide	<0.50		0.50	0.060	ug/L			08/24/20 12:13	1
Carbon tetrachloride	<0.20		0.20	0.070	ug/L			08/24/20 12:13	1
Chlorobenzene	<0.50		0.50	0.060	ug/L			08/24/20 12:13	1
Chloroethane	<0.50		0.50	0.070	ug/L			08/24/20 12:13	1
Chloroform	<0.20		0.20	0.090	ug/L			08/24/20 12:13	1
Chloromethane	<0.50		0.50	0.060	ug/L			08/24/20 12:13	1
cis-1,2-Dichloroethene	<0.20		0.20	0.050	ug/L			08/24/20 12:13	1
cis-1,3-Dichloropropene	<0.20		0.20	0.050	ug/L			08/24/20 12:13	1
Dibromochloromethane	<0.50		0.50	0.070	ug/L			08/24/20 12:13	1
Ethylbenzene	<0.50		0.50	0.060	ug/L			08/24/20 12:13	1
Freon 113	<0.50		0.50	0.060	ug/L			08/24/20 12:13	1
m&p-Xylene	<0.50		0.50	0.10	ug/L			08/24/20 12:13	1
Methylene Chloride	<0.50		0.50	0.070	ug/L			08/24/20 12:13	1
o-Xylene	<0.50		0.50	0.050	ug/L			08/24/20 12:13	1
Styrene	<0.50		0.50	0.050	ug/L			08/24/20 12:13	1
Tetrachloroethene	<0.20		0.20	0.060	ug/L			08/24/20 12:13	1
Toluene	<0.20		0.20	0.070	ug/L			08/24/20 12:13	1
trans-1,2-Dichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 12:13	1
trans-1,3-Dichloropropene	<0.20		0.20	0.060	ug/L			08/24/20 12:13	1
Trichloroethene	<0.20		0.20	0.060	ug/L			08/24/20 12:13	1
Trichlorofluoromethane	<0.50		0.50	0.050	ug/L			08/24/20 12:13	1
Vinyl acetate	<0.50		0.50	0.040	ug/L			08/24/20 12:13	1
Vinyl chloride	<0.20		0.20	0.10	ug/L			08/24/20 12:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/24/20 12:13*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/24/20 12:13*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*08/24/20 12:13*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*08/24/20 12:13*	*1*

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

Lab Sample ID: LCS 410-36419/5
Matrix: Water
Analysis Batch: 36419

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	4.96		ug/L		99	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.24		ug/L		105	75 - 123
1,1,2-Trichloroethane	5.00	5.20		ug/L		104	80 - 120
1,1-Dichloroethane	5.00	5.48		ug/L		110	74 - 120
1,1-Dichloroethene	5.00	5.05		ug/L		101	80 - 131
1,2-Dichloroethane	5.00	5.31		ug/L		106	69 - 122
1,2-Dichloropropane	5.00	5.59		ug/L		112	80 - 120
2-Butanone	37.5	38.3		ug/L		102	59 - 141
2-Hexanone	25.0	27.3		ug/L		109	52 - 140
4-Methyl-2-pentanone	25.0	26.4		ug/L		106	55 - 140
Acetone	37.5	37.2		ug/L		99	60 - 146
Benzene	5.00	5.34		ug/L		107	80 - 120
Bromodichloromethane	5.00	5.00		ug/L		100	73 - 124
Bromoform	5.00	4.31		ug/L		86	49 - 144
Bromomethane	5.00	4.08		ug/L		82	60 - 136
Carbon disulfide	5.00	4.04		ug/L		81	67 - 130
Carbon tetrachloride	5.00	4.92		ug/L		98	64 - 141
Chlorobenzene	5.00	5.16		ug/L		103	80 - 120
Chloroethane	5.00	4.25		ug/L		85	63 - 120
Chloroform	5.00	5.35		ug/L		107	80 - 120
Chloromethane	5.00	4.34		ug/L		87	56 - 124
cis-1,2-Dichloroethene	5.00	5.51		ug/L		110	80 - 122
cis-1,3-Dichloropropene	5.00	5.38		ug/L		108	67 - 121
Dibromochloromethane	5.00	4.71		ug/L		94	64 - 138
Ethylbenzene	5.00	5.24		ug/L		105	80 - 120
Freon 113	5.00	4.36		ug/L		87	75 - 133
m&p-Xylene	10.0	10.6		ug/L		106	80 - 120
Methylene Chloride	5.00	5.21		ug/L		104	80 - 120
o-Xylene	5.00	4.97		ug/L		99	80 - 120
Styrene	5.00	5.29		ug/L		106	80 - 120
Tetrachloroethene	5.00	5.16		ug/L		103	80 - 120
Toluene	5.00	5.17		ug/L		103	80 - 120
trans-1,2-Dichloroethene	5.00	5.11		ug/L		102	80 - 122
trans-1,3-Dichloropropene	5.00	4.86		ug/L		97	61 - 129
Trichloroethene	5.00	5.24		ug/L		105	80 - 120
Trichlorofluoromethane	5.00	4.50		ug/L		90	62 - 136
Vinyl chloride	5.00	4.12		ug/L		82	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

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

Lab Sample ID: LCS 410-36419/7
Matrix: Water
Analysis Batch: 36419

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	13.8		ug/L		110	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 410-36419/6
Matrix: Water
Analysis Batch: 36419

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	5.02		ug/L		100	78 - 126	1	30
1,1,2,2-Tetrachloroethane			5.00	5.19		ug/L		104	75 - 123	1	30
1,1,2-Trichloroethane			5.00	5.23		ug/L		105	80 - 120	1	30
1,1-Dichloroethane			5.00	5.46		ug/L		109	74 - 120	0	30
1,1-Dichloroethene			5.00	4.99		ug/L		100	80 - 131	1	30
1,2-Dichloroethane			5.00	5.26		ug/L		105	69 - 122	1	30
1,2-Dichloropropane			5.00	5.65		ug/L		113	80 - 120	1	30
2-Butanone			37.5	37.9		ug/L		101	59 - 141	1	30
2-Hexanone			25.0	26.9		ug/L		108	52 - 140	1	30
4-Methyl-2-pentanone			25.0	25.9		ug/L		104	55 - 140	2	30
Acetone			37.5	36.7		ug/L		98	60 - 146	1	30
Benzene			5.00	5.33		ug/L		107	80 - 120	0	30
Bromodichloromethane			5.00	5.15		ug/L		103	73 - 124	3	30
Bromoform			5.00	4.23		ug/L		85	49 - 144	2	30
Bromomethane			5.00	4.10		ug/L		82	60 - 136	1	30
Carbon disulfide			5.00	4.03		ug/L		81	67 - 130	0	30
Carbon tetrachloride			5.00	4.87		ug/L		97	64 - 141	1	30
Chlorobenzene			5.00	5.28		ug/L		106	80 - 120	2	30
Chloroethane			5.00	4.34		ug/L		87	63 - 120	2	30
Chloroform			5.00	5.38		ug/L		108	80 - 120	1	30
Chloromethane			5.00	4.41		ug/L		88	56 - 124	1	30
cis-1,2-Dichloroethene			5.00	5.46		ug/L		109	80 - 122	1	30
cis-1,3-Dichloropropene			5.00	5.35		ug/L		107	67 - 121	1	30
Dibromochloromethane			5.00	4.70		ug/L		94	64 - 138	0	30
Ethylbenzene			5.00	5.27		ug/L		105	80 - 120	1	30
Freon 113			5.00	4.37		ug/L		87	75 - 133	0	30
m&p-Xylene			10.0	10.3		ug/L		103	80 - 120	3	30
Methylene Chloride			5.00	5.27		ug/L		105	80 - 120	1	30
o-Xylene			5.00	5.16		ug/L		103	80 - 120	4	30
Styrene			5.00	5.37		ug/L		107	80 - 120	1	30
Tetrachloroethene			5.00	5.17		ug/L		103	80 - 120	0	30
Toluene			5.00	5.22		ug/L		104	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	5.07		ug/L		101	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	4.90		ug/L		98	61 - 129	1	30
Trichloroethene			5.00	5.29		ug/L		106	80 - 120	1	30

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

Lab Sample ID: LCSD 410-36419/6
Matrix: Water
Analysis Batch: 36419

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	4.51		ug/L		90	62 - 136	0	30
Vinyl chloride			5.00	4.21		ug/L		84	60 - 125	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 410-36419/8
Matrix: Water
Analysis Batch: 36419

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	13.6		ug/L		109	38 - 145	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: MB 410-37329/10
Matrix: Water
Analysis Batch: 37329

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	<0.50		0.50	0.060	ug/L			08/26/20 11:06	1
1,1,2,2-Tetrachloroethane	<0.20		0.20	0.070	ug/L			08/26/20 11:06	1
1,1,2-Trichloroethane	<0.20		0.20	0.060	ug/L			08/26/20 11:06	1
1,1-Dichloroethane	<0.50		0.50	0.070	ug/L			08/26/20 11:06	1
1,1-Dichloroethene	<0.20		0.20	0.060	ug/L			08/26/20 11:06	1
1,2-Dichloroethane	<0.20		0.20	0.050	ug/L			08/26/20 11:06	1
1,2-Dichloropropane	<0.50		0.50	0.060	ug/L			08/26/20 11:06	1
2-Butanone	<5.0		5.0	0.60	ug/L			08/26/20 11:06	1
2-Hexanone	<5.0		5.0	0.60	ug/L			08/26/20 11:06	1
4-Methyl-2-pentanone	<5.0		5.0	0.70	ug/L			08/26/20 11:06	1
Acetone	<5.0		5.0	0.90	ug/L			08/26/20 11:06	1
Benzene	<0.20		0.20	0.050	ug/L			08/26/20 11:06	1
Bromodichloromethane	<0.50		0.50	0.050	ug/L			08/26/20 11:06	1
Bromoform	<1.0		1.0	0.30	ug/L			08/26/20 11:06	1
Bromomethane	<0.50		0.50	0.070	ug/L			08/26/20 11:06	1
Carbon disulfide	<0.50		0.50	0.060	ug/L			08/26/20 11:06	1
Carbon tetrachloride	<0.20		0.20	0.070	ug/L			08/26/20 11:06	1
Chlorobenzene	<0.50		0.50	0.060	ug/L			08/26/20 11:06	1
Chloroethane	<0.50		0.50	0.070	ug/L			08/26/20 11:06	1
Chloroform	<0.20		0.20	0.090	ug/L			08/26/20 11:06	1
Chloromethane	<0.50		0.50	0.060	ug/L			08/26/20 11:06	1

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

Lab Sample ID: MB 410-37329/10
Matrix: Water
Analysis Batch: 37329

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	<0.20		0.20	0.050	ug/L			08/26/20 11:06	1
cis-1,3-Dichloropropene	<0.20		0.20	0.050	ug/L			08/26/20 11:06	1
Dibromochloromethane	<0.50		0.50	0.070	ug/L			08/26/20 11:06	1
Ethylbenzene	<0.50		0.50	0.060	ug/L			08/26/20 11:06	1
Freon 113	<0.50		0.50	0.060	ug/L			08/26/20 11:06	1
m&p-Xylene	<0.50		0.50	0.10	ug/L			08/26/20 11:06	1
Methylene Chloride	<0.50		0.50	0.070	ug/L			08/26/20 11:06	1
o-Xylene	<0.50		0.50	0.050	ug/L			08/26/20 11:06	1
Styrene	<0.50		0.50	0.050	ug/L			08/26/20 11:06	1
Tetrachloroethene	<0.20		0.20	0.060	ug/L			08/26/20 11:06	1
Toluene	<0.20		0.20	0.070	ug/L			08/26/20 11:06	1
trans-1,2-Dichloroethene	<0.20		0.20	0.060	ug/L			08/26/20 11:06	1
trans-1,3-Dichloropropene	<0.20		0.20	0.060	ug/L			08/26/20 11:06	1
Trichloroethene	<0.20		0.20	0.060	ug/L			08/26/20 11:06	1
Trichlorofluoromethane	<0.50		0.50	0.050	ug/L			08/26/20 11:06	1
Vinyl acetate	<0.50		0.50	0.040	ug/L			08/26/20 11:06	1
Vinyl chloride	<0.20		0.20	0.10	ug/L			08/26/20 11:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/26/20 11:06*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/26/20 11:06*	*1*
4-Bromofluorobenzene (Surr)	*112*		*80 - 120*		*08/26/20 11:06*	*1*
Toluene-d8 (Surr)	*89*		*80 - 120*		*08/26/20 11:06*	*1*

Lab Sample ID: LCS 410-37329/5
Matrix: Water
Analysis Batch: 37329

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	5.05		ug/L		101	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.45		ug/L		109	75 - 123
1,1,2-Trichloroethane	5.00	5.37		ug/L		107	80 - 120
1,1-Dichloroethane	5.00	5.46		ug/L		109	74 - 120
1,1-Dichloroethene	5.00	5.10		ug/L		102	80 - 131
1,2-Dichloroethane	5.00	5.26		ug/L		105	69 - 122
1,2-Dichloropropane	5.00	5.65		ug/L		113	80 - 120
2-Butanone	37.5	35.5		ug/L		95	59 - 141
2-Hexanone	25.0	24.7		ug/L		99	52 - 140
4-Methyl-2-pentanone	25.0	23.1		ug/L		92	55 - 140
Acetone	37.5	35.9		ug/L		96	60 - 146
Benzene	5.00	5.33		ug/L		107	80 - 120
Bromodichloromethane	5.00	5.00		ug/L		100	73 - 124
Bromoform	5.00	4.68		ug/L		94	49 - 144
Bromomethane	5.00	3.97		ug/L		79	60 - 136
Carbon disulfide	5.00	4.51		ug/L		90	67 - 130
Carbon tetrachloride	5.00	5.07		ug/L		101	64 - 141
Chlorobenzene	5.00	5.20		ug/L		104	80 - 120
Chloroethane	5.00	4.11		ug/L		82	63 - 120

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

Lab Sample ID: LCS 410-37329/5
Matrix: Water
Analysis Batch: 37329

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	5.06		ug/L		101	80 - 120
Chloromethane	5.00	4.15		ug/L		83	56 - 124
cis-1,2-Dichloroethene	5.00	5.36		ug/L		107	80 - 122
cis-1,3-Dichloropropene	5.00	5.16		ug/L		103	67 - 121
Dibromochloromethane	5.00	5.00		ug/L		100	64 - 138
Ethylbenzene	5.00	5.30		ug/L		106	80 - 120
Freon 113	5.00	4.42		ug/L		88	75 - 133
m&p-Xylene	10.0	10.5		ug/L		105	80 - 120
Methylene Chloride	5.00	5.20		ug/L		104	80 - 120
o-Xylene	5.00	5.38		ug/L		108	80 - 120
Styrene	5.00	5.56		ug/L		111	80 - 120
Tetrachloroethene	5.00	5.40		ug/L		108	80 - 120
Toluene	5.00	5.42		ug/L		108	80 - 120
trans-1,2-Dichloroethene	5.00	4.98		ug/L		100	80 - 122
trans-1,3-Dichloropropene	5.00	5.01		ug/L		100	61 - 129
Trichloroethene	5.00	5.31		ug/L		106	80 - 120
Trichlorofluoromethane	5.00	4.57		ug/L		91	62 - 136
Vinyl chloride	5.00	3.98		ug/L		80	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*110*		*80 - 120*
Toluene-d8 (Surr)	*106*		*80 - 120*

Lab Sample ID: LCS 410-37329/7
Matrix: Water
Analysis Batch: 37329

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	13.5		ug/L		108	38 - 145

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Lab Sample ID: LCSD 410-37329/6
Matrix: Water
Analysis Batch: 37329

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	4.75		ug/L		95	78 - 126	6	30
1,1,2,2-Tetrachloroethane	5.00	5.56		ug/L		111	75 - 123	2	30
1,1,2-Trichloroethane	5.00	5.51		ug/L		110	80 - 120	3	30
1,1-Dichloroethane	5.00	5.23		ug/L		105	74 - 120	4	30
1,1-Dichloroethene	5.00	4.82		ug/L		96	80 - 131	6	30

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

Lab Sample ID: LCSD 410-37329/6
Matrix: Water
Analysis Batch: 37329

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	5.15		ug/L		103	69 - 122	2	30
1,2-Dichloropropane			5.00	5.34		ug/L		107	80 - 120	6	30
2-Butanone			37.5	34.9		ug/L		93	59 - 141	2	30
2-Hexanone			25.0	21.0		ug/L		84	52 - 140	16	30
4-Methyl-2-pentanone			25.0	21.0		ug/L		84	55 - 140	9	30
Acetone			37.5	36.5		ug/L		97	60 - 146	2	30
Benzene			5.00	5.11		ug/L		102	80 - 120	4	30
Bromodichloromethane			5.00	4.73		ug/L		95	73 - 124	6	30
Bromoform			5.00	5.23		ug/L		105	49 - 144	11	30
Bromomethane			5.00	3.68		ug/L		74	60 - 136	8	30
Carbon disulfide			5.00	4.20		ug/L		84	67 - 130	7	30
Carbon tetrachloride			5.00	4.71		ug/L		94	64 - 141	8	30
Chlorobenzene			5.00	5.09		ug/L		102	80 - 120	2	30
Chloroethane			5.00	3.68		ug/L		74	63 - 120	11	30
Chloroform			5.00	5.05		ug/L		101	80 - 120	0	30
Chloromethane			5.00	3.82		ug/L		76	56 - 124	8	30
cis-1,2-Dichloroethene			5.00	5.29		ug/L		106	80 - 122	1	30
cis-1,3-Dichloropropene			5.00	4.92		ug/L		98	67 - 121	5	30
Dibromochloromethane			5.00	5.10		ug/L		102	64 - 138	2	30
Ethylbenzene			5.00	5.29		ug/L		106	80 - 120	0	30
Freon 113			5.00	4.16		ug/L		83	75 - 133	6	30
m&p-Xylene			10.0	11.2		ug/L		112	80 - 120	7	30
Methylene Chloride			5.00	5.01		ug/L		100	80 - 120	4	30
o-Xylene			5.00	5.74		ug/L		115	80 - 120	6	30
Styrene			5.00	5.88		ug/L		118	80 - 120	6	30
Tetrachloroethene			5.00	5.31		ug/L		106	80 - 120	2	30
Toluene			5.00	5.38		ug/L		108	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	4.82		ug/L		96	80 - 122	3	30
trans-1,3-Dichloropropene			5.00	4.93		ug/L		99	61 - 129	2	30
Trichloroethene			5.00	5.01		ug/L		100	80 - 120	6	30
Trichlorofluoromethane			5.00	4.12		ug/L		82	62 - 136	10	30
Vinyl chloride			5.00	3.63		ug/L		73	60 - 125	9	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*125*	*X*	*80 - 120*
Toluene-d8 (Surr)	*109*		*80 - 120*

Lab Sample ID: LCSD 410-37329/8
Matrix: Water
Analysis Batch: 37329

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	13.3		ug/L		106	38 - 145	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*

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

Lab Sample ID: LCSD 410-37329/8
Matrix: Water
Analysis Batch: 37329

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

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-33541/1-A
Matrix: Water
Analysis Batch: 33556

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33541

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 11:07	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 11:07	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 11:07	1
Methane (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 11:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*91*		*28 - 140*	*08/15/20 10:04*	*08/15/20 11:07*	*1*

Lab Sample ID: LCS 410-33541/2-A
Matrix: Water
Analysis Batch: 33556

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33541

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acetylene (1C)			51.2	52.42		ug/L		102	57 - 146		
Ethane (1C)			59.4	54.96		ug/L		93	85 - 115		
Ethene (1C)			60.4	57.32		ug/L		95	83 - 115		
Methane (1C)			59.4	59.26		ug/L		100	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*97*		*28 - 140*

Lab Sample ID: LCSD 410-33541/3-A
Matrix: Water
Analysis Batch: 33556

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 33541

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetylene (1C)			51.2	51.55		ug/L		101	57 - 146	2	20
Ethane (1C)			59.4	54.71		ug/L		92	85 - 115	0	20
Ethene (1C)			60.4	56.45		ug/L		94	83 - 115	2	20
Methane (1C)			59.4	59.54		ug/L		100	85 - 115	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*96*		*28 - 140*

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 410-33890/1-A
Matrix: Water
Analysis Batch: 33923

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33890

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/17/20 08:59	08/17/20 11:22	1
Ethane (1C)	5.00	U	5.00		ug/L		08/17/20 08:59	08/17/20 11:22	1
Ethene (1C)	5.00	U	5.00		ug/L		08/17/20 08:59	08/17/20 11:22	1
Methane (1C)	5.00	U	5.00		ug/L		08/17/20 08:59	08/17/20 11:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*97*		*28 - 140*	*08/17/20 08:59*	*08/17/20 11:22*	*1*

Lab Sample ID: LCS 410-33890/2-A
Matrix: Water
Analysis Batch: 33923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33890

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acetylene (1C)			51.2	51.79		ug/L		101	57 - 146		
Ethane (1C)			59.4	54.71		ug/L		92	85 - 115		
Ethene (1C)			60.4	56.63		ug/L		94	83 - 115		
Methane (1C)			59.4	58.34		ug/L		98	85 - 115		

Surrogate		*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)		*92*		*28 - 140*

Lab Sample ID: LCSD 410-33890/3-A
Matrix: Water
Analysis Batch: 33923

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 33890

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetylene (1C)			51.2	51.68		ug/L		101	57 - 146	0	20
Ethane (1C)			59.4	56.56		ug/L		95	85 - 115	3	20
Ethene (1C)			60.4	58.42		ug/L		97	83 - 115	3	20
Methane (1C)			59.4	60.63		ug/L		102	85 - 115	4	20

Surrogate		*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)		*97*		*28 - 140*

Lab Sample ID: MB 410-33896/1-A
Matrix: Water
Analysis Batch: 33923

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33896

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/17/20 09:03	08/17/20 17:32	1
Ethane (1C)	5.00	U	5.00		ug/L		08/17/20 09:03	08/17/20 17:32	1
Ethene (1C)	5.00	U	5.00		ug/L		08/17/20 09:03	08/17/20 17:32	1
Methane (1C)	5.00	U	5.00		ug/L		08/17/20 09:03	08/17/20 17:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*94*		*28 - 140*	*08/17/20 09:03*	*08/17/20 17:32*	*1*

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 410-33896/2-A
Matrix: Water
Analysis Batch: 33923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33896

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acetylene (1C)			51.2	51.34		ug/L		100	57 - 146		
Ethane (1C)			59.4	55.50		ug/L		93	85 - 115		
Ethene (1C)			60.4	57.32		ug/L		95	83 - 115		
Methane (1C)			59.4	59.33		ug/L		100	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*93*		*28 - 140*

Lab Sample ID: LCSD 410-33896/3-A
Matrix: Water
Analysis Batch: 33923

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 33896

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetylene (1C)			51.2	50.52		ug/L		99	57 - 146	2	20
Ethane (1C)			59.4	55.04		ug/L		93	85 - 115	1	20
Ethene (1C)			60.4	56.63		ug/L		94	83 - 115	1	20
Methane (1C)			59.4	59.61		ug/L		100	85 - 115	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*91*		*28 - 140*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-34574/4
Matrix: Water
Analysis Batch: 34574

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U	0.100		mg/L			08/19/20 00:57	1
Nitrogen, Nitrite	0.100	U	0.100		mg/L			08/19/20 00:57	1

Lab Sample ID: LCS 410-34574/3
Matrix: Water
Analysis Batch: 34574

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.7177		mg/L		96	90 - 110		
Nitrogen, Nitrite			0.750	0.7178		mg/L		96	90 - 110		

Lab Sample ID: 410-10700-2 MS
Matrix: Water
Analysis Batch: 34574

Client Sample ID: E-3-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate	0.500	U H	2.50	2.587		mg/L		103	90 - 110		
Nitrogen, Nitrite	0.500	U H	2.50	2.560		mg/L		102	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy (Continued)

Lab Sample ID: 410-10700-2 DU
Matrix: Water
Analysis Batch: 34574

Client Sample ID: E-3-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrogen, Nitrate	0.500	U H	0.500	U	mg/L		NC	15
Nitrogen, Nitrite	0.500	U H	0.500	U	mg/L		NC	15

Lab Sample ID: MB 410-43215/4
Matrix: Water
Analysis Batch: 43215

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U	0.100	mg/L			09/12/20 10:36	1
Nitrogen, Nitrite	0.100	U	0.100	mg/L			09/12/20 10:36	1

Lab Sample ID: LCS 410-43215/3
Matrix: Water
Analysis Batch: 43215

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate	0.750	0.7731		mg/L		103	90 - 110
Nitrogen, Nitrite	0.752	0.7800		mg/L		104	90 - 110

Lab Sample ID: 410-10700-8 MS
Matrix: Water
Analysis Batch: 43215

Client Sample ID: E-16-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate	0.100	U H F1	5.00	1.041	F1	mg/L		21	90 - 110
Nitrogen, Nitrite	0.100	U H F1	5.01	1.035	F1	mg/L		21	90 - 110

Lab Sample ID: 410-10700-8 DU
Matrix: Water
Analysis Batch: 43215

Client Sample ID: E-16-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrogen, Nitrate	0.100	U H F1	0.100	U	mg/L		NC	15
Nitrogen, Nitrite	0.100	U H F1	0.100	U	mg/L		NC	15

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-34575/4
Matrix: Water
Analysis Batch: 34575

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00	mg/L			08/19/20 00:57	1

Lab Sample ID: LCS 410-34575/3
Matrix: Water
Analysis Batch: 34575

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.664		mg/L		102	90 - 110

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 410-43216/4
Matrix: Water
Analysis Batch: 43216

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			09/12/20 10:36	1

Lab Sample ID: LCS 410-43216/3
Matrix: Water
Analysis Batch: 43216

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.636		mg/L		102	90 - 110		

Lab Sample ID: 410-10700-8 MS
Matrix: Water
Analysis Batch: 43216

Client Sample ID: E-16-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	1.85	H F1	50.0	12.02	F1	mg/L		20	90 - 110		

Lab Sample ID: 410-10700-8 DU
Matrix: Water
Analysis Batch: 43216

Client Sample ID: E-16-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Sulfate	1.85	H F1		1.800		mg/L				3	15

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 410-33615/1-A
Matrix: Water
Analysis Batch: 34354

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33615

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.206	U	0.206		mg/L		08/15/20 14:12	08/17/20 22:16	1

Lab Sample ID: LCS 410-33615/2-A
Matrix: Water
Analysis Batch: 34354

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33615

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			0.402	0.4771		mg/L		119	80 - 120		

Lab Sample ID: MB 410-33573/1-A
Matrix: Water
Analysis Batch: 35668

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 33573

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.200	U	0.200		mg/L		08/15/20 11:10	08/20/20 20:11	1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-33573/2-A
Matrix: Water
Analysis Batch: 35668

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 33573

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			0.402	0.4143		mg/L		103	80 - 120		

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-35283/5
Matrix: Water
Analysis Batch: 35283

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			08/19/20 15:48	1

Lab Sample ID: LCS 410-35283/4
Matrix: Water
Analysis Batch: 35283

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	25.50		mg/L		102	91 - 113		

Lab Sample ID: 410-10700-1 MS
Matrix: Water
Analysis Batch: 35283

Client Sample ID: E-2-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	1.68		10.0	12.30		mg/L		106	91 - 113		

Lab Sample ID: 410-10700-1 DU
Matrix: Water
Analysis Batch: 35283

Client Sample ID: E-2-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	1.68			1.987	F5	mg/L				17	3

Lab Sample ID: MB 410-35808/5
Matrix: Water
Analysis Batch: 35808

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			08/20/20 15:07	1

Lab Sample ID: LCS 410-35808/4
Matrix: Water
Analysis Batch: 35808

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	25.15		mg/L		101	91 - 113		

GC/MS VOA

Analysis Batch: 36419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-1	E-2-0820	Total/NA	Water	8260C LL	
410-10700-2	E-3-0820	Total/NA	Water	8260C LL	
410-10700-3	E-4-0820	Total/NA	Water	8260C LL	
410-10700-4	E-8-0820	Total/NA	Water	8260C LL	
410-10700-5	E-11-0820	Total/NA	Water	8260C LL	
410-10700-5 - DL	E-11-0820	Total/NA	Water	8260C LL	
410-10700-6	E-12-0820	Total/NA	Water	8260C LL	
410-10700-7	E-15-0820	Total/NA	Water	8260C LL	
410-10700-8	E-16-0820	Total/NA	Water	8260C LL	
410-10700-15	Trip Blanks	Total/NA	Water	8260C LL	
MB 410-36419/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-36419/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-36419/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-36419/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-36419/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Analysis Batch: 37329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-4 - DL	E-8-0820	Total/NA	Water	8260C LL	
410-10700-5 - RADL	E-11-0820	Total/NA	Water	8260C LL	
MB 410-37329/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-37329/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-37329/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-37329/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-37329/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

GC VOA

Prep Batch: 33541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-1	E-2-0820	Total/NA	Water	RSK-175	
410-10700-2	E-3-0820	Total/NA	Water	RSK-175	
410-10700-3	E-4-0820	Total/NA	Water	RSK-175	
410-10700-5	E-11-0820	Total/NA	Water	RSK-175	
410-10700-6	E-12-0820	Total/NA	Water	RSK-175	
410-10700-7	E-15-0820	Total/NA	Water	RSK-175	
410-10700-8	E-16-0820	Total/NA	Water	RSK-175	
MB 410-33541/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-33541/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-33541/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 33556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-1	E-2-0820	Total/NA	Water	RSK-175	33541
410-10700-2	E-3-0820	Total/NA	Water	RSK-175	33541
410-10700-3	E-4-0820	Total/NA	Water	RSK-175	33541
410-10700-5	E-11-0820	Total/NA	Water	RSK-175	33541
410-10700-6	E-12-0820	Total/NA	Water	RSK-175	33541
410-10700-7	E-15-0820	Total/NA	Water	RSK-175	33541
410-10700-8	E-16-0820	Total/NA	Water	RSK-175	33541
MB 410-33541/1-A	Method Blank	Total/NA	Water	RSK-175	33541

GC VOA (Continued)

Analysis Batch: 33556 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-33541/2-A	Lab Control Sample	Total/NA	Water	RSK-175	33541
LCSD 410-33541/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	33541

Prep Batch: 33890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-1 - DL	E-2-0820	Total/NA	Water	RSK-175	
410-10700-2 - DL	E-3-0820	Total/NA	Water	RSK-175	
410-10700-5 - DL	E-11-0820	Total/NA	Water	RSK-175	
MB 410-33890/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-33890/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-33890/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Prep Batch: 33896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-6 - DL	E-12-0820	Total/NA	Water	RSK-175	
410-10700-7 - DL	E-15-0820	Total/NA	Water	RSK-175	
410-10700-8 - DL	E-16-0820	Total/NA	Water	RSK-175	
MB 410-33896/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-33896/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-33896/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 33923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-1 - DL	E-2-0820	Total/NA	Water	RSK-175	33890
410-10700-2 - DL	E-3-0820	Total/NA	Water	RSK-175	33890
410-10700-5 - DL	E-11-0820	Total/NA	Water	RSK-175	33890
410-10700-6 - DL	E-12-0820	Total/NA	Water	RSK-175	33896
410-10700-7 - DL	E-15-0820	Total/NA	Water	RSK-175	33896
410-10700-8 - DL	E-16-0820	Total/NA	Water	RSK-175	33896
MB 410-33890/1-A	Method Blank	Total/NA	Water	RSK-175	33890
MB 410-33896/1-A	Method Blank	Total/NA	Water	RSK-175	33896
LCS 410-33890/2-A	Lab Control Sample	Total/NA	Water	RSK-175	33890
LCS 410-33896/2-A	Lab Control Sample	Total/NA	Water	RSK-175	33896
LCSD 410-33890/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	33890
LCSD 410-33896/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	33896

HPLC/IC

Analysis Batch: 34574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-2	E-3-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-6	E-12-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-7	E-15-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-8	E-16-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-34574/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-34574/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-10700-2 MS	E-3-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-2 DU	E-3-0820	Total/NA	Water	EPA 300.0 R2.1	

HPLC/IC

Analysis Batch: 34575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-2	E-3-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-6	E-12-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-7	E-15-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-8	E-16-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-34575/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-34575/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 43215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-1	E-2-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-2	E-3-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-3	E-4-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-5	E-11-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-6	E-12-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-7	E-15-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-8	E-16-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-43215/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-43215/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-10700-8 MS	E-16-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-8 DU	E-16-0820	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 43216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-1	E-2-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-2	E-3-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-3	E-4-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-5	E-11-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-6	E-12-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-7	E-15-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-8	E-16-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-43216/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-43216/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-10700-8 MS	E-16-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10700-8 DU	E-16-0820	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 33573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-1	E-2-0820	Total Recoverable	Water	3005A	
410-10700-2	E-3-0820	Total Recoverable	Water	3005A	
410-10700-3	E-4-0820	Total Recoverable	Water	3005A	
MB 410-33573/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-33573/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 33615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-1	E-2-0820	Dissolved	Water	Non-Digest Prep	
410-10700-2	E-3-0820	Dissolved	Water	Non-Digest Prep	
410-10700-3	E-4-0820	Dissolved	Water	Non-Digest Prep	
MB 410-33615/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	

Metals (Continued)

Prep Batch: 33615 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-33615/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Analysis Batch: 34354

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-1	E-2-0820	Dissolved	Water	6010D	33615
410-10700-2	E-3-0820	Dissolved	Water	6010D	33615
410-10700-3	E-4-0820	Dissolved	Water	6010D	33615
MB 410-33615/1-A	Method Blank	Total/NA	Water	6010D	33615
LCS 410-33615/2-A	Lab Control Sample	Total/NA	Water	6010D	33615

Analysis Batch: 35668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-1	E-2-0820	Total Recoverable	Water	6010D	33573
410-10700-2	E-3-0820	Total Recoverable	Water	6010D	33573
410-10700-3	E-4-0820	Total Recoverable	Water	6010D	33573
MB 410-33573/1-A	Method Blank	Total Recoverable	Water	6010D	33573
LCS 410-33573/2-A	Lab Control Sample	Total Recoverable	Water	6010D	33573

General Chemistry

Analysis Batch: 35283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-1	E-2-0820	Total/NA	Water	5310C-2011	
410-10700-2	E-3-0820	Total/NA	Water	5310C-2011	
410-10700-3	E-4-0820	Total/NA	Water	5310C-2011	
410-10700-6	E-12-0820	Total/NA	Water	5310C-2011	
410-10700-8	E-16-0820	Total/NA	Water	5310C-2011	
MB 410-35283/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-35283/4	Lab Control Sample	Total/NA	Water	5310C-2011	
410-10700-1 MS	E-2-0820	Total/NA	Water	5310C-2011	
410-10700-1 DU	E-2-0820	Total/NA	Water	5310C-2011	

Analysis Batch: 35808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10700-5	E-11-0820	Total/NA	Water	5310C-2011	
410-10700-7	E-15-0820	Total/NA	Water	5310C-2011	
MB 410-35808/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-35808/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10700-1

Client Sample ID: E-2-0820
Date Collected: 08/12/20 16:00
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 13:37	K4WN	ELLE
Total/NA	Prep	RSK-175			33541	08/15/20 10:04	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	33556	08/15/20 13:15	IYN5	ELLE
Total/NA	Prep	RSK-175	DL		33890	08/17/20 08:59	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	5	33923	08/17/20 16:20	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43215	09/12/20 13:55	WHJ3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43216	09/12/20 13:55	WHJ3	ELLE
Dissolved	Prep	Non-Digest Prep			33615	08/15/20 14:12	UJLA	ELLE
Dissolved	Analysis	6010D		1	34354	08/17/20 23:09	UEFS	ELLE
Total Recoverable	Prep	3005A			33573	08/15/20 11:10	UJLA	ELLE
Total Recoverable	Analysis	6010D		1	35668	08/20/20 20:56	UCIG	ELLE
Total/NA	Analysis	5310C-2011		1	35283	08/19/20 16:02	KGQ6	ELLE

Client Sample ID: E-3-0820
Date Collected: 08/12/20 11:50
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 13:58	K4WN	ELLE
Total/NA	Prep	RSK-175			33541	08/15/20 10:04	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	33556	08/15/20 13:33	IYN5	ELLE
Total/NA	Prep	RSK-175	DL		33890	08/17/20 08:59	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	100	33923	08/17/20 16:38	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	34574	08/19/20 01:14	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	34575	08/19/20 01:14	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43215	09/12/20 12:43	WHJ3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43216	09/12/20 12:43	WHJ3	ELLE
Dissolved	Prep	Non-Digest Prep			33615	08/15/20 14:12	UJLA	ELLE
Dissolved	Analysis	6010D		1	34354	08/17/20 23:12	UEFS	ELLE
Total Recoverable	Prep	3005A			33573	08/15/20 11:10	UJLA	ELLE
Total Recoverable	Analysis	6010D		1	35668	08/20/20 20:53	UCIG	ELLE
Total/NA	Analysis	5310C-2011		1	35283	08/19/20 17:08	KGQ6	ELLE

Client Sample ID: E-4-0820
Date Collected: 08/12/20 10:30
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 14:20	K4WN	ELLE
Total/NA	Prep	RSK-175			33541	08/15/20 10:04	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	33556	08/15/20 14:13	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43215	09/12/20 12:07	WHJ3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43216	09/12/20 12:07	WHJ3	ELLE

Client Sample ID: E-4-0820
Date Collected: 08/12/20 10:30
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	Non-Digest Prep			33615	08/15/20 14:12	UJLA	ELLE
Dissolved	Analysis	6010D		1	34354	08/17/20 23:15	UEFS	ELLE
Total Recoverable	Prep	3005A			33573	08/15/20 11:10	UJLA	ELLE
Total Recoverable	Analysis	6010D		1	35668	08/20/20 20:50	UCIG	ELLE
Total/NA	Analysis	5310C-2011		1	35283	08/19/20 17:22	KGQ6	ELLE

Client Sample ID: E-8-0820
Date Collected: 08/12/20 15:20
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 14:41	K4WN	ELLE
Total/NA	Analysis	8260C LL	DL	10	37329	08/26/20 16:47	K4WN	ELLE

Client Sample ID: E-11-0820
Date Collected: 08/12/20 14:20
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 18:34	K4WN	ELLE
Total/NA	Analysis	8260C LL	DL	10	36419	08/24/20 18:55	K4WN	ELLE
Total/NA	Analysis	8260C LL	RADL	10	37329	08/26/20 17:09	K4WN	ELLE
Total/NA	Prep	RSK-175			33541	08/15/20 10:04	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	33556	08/15/20 14:32	IYN5	ELLE
Total/NA	Prep	RSK-175	DL		33890	08/17/20 08:59	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	50	33923	08/17/20 16:56	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43215	09/12/20 13:01	WHJ3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43216	09/12/20 13:01	WHJ3	ELLE
Total/NA	Analysis	5310C-2011		10	35808	08/20/20 16:40	KGQ6	ELLE

Client Sample ID: E-12-0820
Date Collected: 08/12/20 11:15
Date Received: 08/14/20 11:36

Lab Sample ID: 410-10700-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 15:02	K4WN	ELLE
Total/NA	Prep	RSK-175			33541	08/15/20 10:04	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	33556	08/15/20 14:50	IYN5	ELLE
Total/NA	Prep	RSK-175	DL		33896	08/17/20 09:03	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	50	33923	08/17/20 18:27	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	34574	08/19/20 05:32	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	34575	08/19/20 05:32	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43215	09/12/20 12:25	WHJ3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43216	09/12/20 12:25	WHJ3	ELLE

Lab Chronicle

Client: Landau & Associates, Inc.
Job ID: 410-10700-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: E-12-0820
Lab Sample ID: 410-10700-6
Date Collected: 08/12/20 11:15
Matrix: Water
Date Received: 08/14/20 11:36

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	5310C-2011		1	35283	08/19/20 18:15	KGQ6	ELLE

Client Sample ID: E-15-0820
Lab Sample ID: 410-10700-7
Date Collected: 08/12/20 09:40
Matrix: Water
Date Received: 08/14/20 11:36

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 15:23	K4WN	ELLE
Total/NA	Prep	RSK-175			33541	08/15/20 10:04	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	33556	08/15/20 15:07	IYN5	ELLE
Total/NA	Prep	RSK-175	DL		33896	08/17/20 09:03	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	50	33923	08/17/20 18:45	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	34574	08/19/20 06:06	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	34575	08/19/20 06:06	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43215	09/12/20 11:49	WHJ3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43216	09/12/20 11:49	WHJ3	ELLE
Total/NA	Analysis	5310C-2011		10	35808	08/20/20 17:34	KGQ6	ELLE

Client Sample ID: E-16-0820
Lab Sample ID: 410-10700-8
Date Collected: 08/12/20 09:10
Matrix: Water
Date Received: 08/14/20 11:36

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 15:45	K4WN	ELLE
Total/NA	Prep	RSK-175			33541	08/15/20 10:04	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	33556	08/15/20 15:25	IYN5	ELLE
Total/NA	Prep	RSK-175	DL		33896	08/17/20 09:03	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	50	33923	08/17/20 19:04	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	34574	08/19/20 05:49	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	34575	08/19/20 05:49	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43215	09/12/20 10:55	WHJ3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43216	09/12/20 10:55	WHJ3	ELLE
Total/NA	Analysis	5310C-2011		1	35283	08/19/20 18:42	KGQ6	ELLE

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10700-15
Date Collected: 08/12/20 00:00
Matrix: Water
Date Received: 08/14/20 11:36

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 12:34	K4WN	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: 410-10700-1
Project/Site: Boeing of Portland/0025116.120.412

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/0025116.120.412

Job ID: 410-10700-1

Method	Method Description	Protocol	Laboratory
8260C LL	Volatile Organic Compounds by GC/MS	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010D	Metals (ICP)	SW846	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

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: 410-10700-1
Project/Site: Boeing of Portland/0025116.120.412

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-10700-1	E-2-0820	Water	08/12/20 16:00	08/14/20 11:36	
410-10700-2	E-3-0820	Water	08/12/20 11:50	08/14/20 11:36	
410-10700-3	E-4-0820	Water	08/12/20 10:30	08/14/20 11:36	
410-10700-4	E-8-0820	Water	08/12/20 15:20	08/14/20 11:36	
410-10700-5	E-11-0820	Water	08/12/20 14:20	08/14/20 11:36	
410-10700-6	E-12-0820	Water	08/12/20 11:15	08/14/20 11:36	
410-10700-7	E-15-0820	Water	08/12/20 09:40	08/14/20 11:36	
410-10700-8	E-16-0820	Water	08/12/20 09:10	08/14/20 11:36	
410-10700-15	Trip Blanks	Water	08/12/20 00:00	08/14/20 11:36	

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-10700 Chain of Custody

use only _____

1 Client Information

Site Location: Gresham Oregon
Site Project: Boeing of Portland
Site Program/#: 0025116.120.412
Boeing PM: Debbie Jaeger
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL/GJN # of Coolers: 1

4 Analyses Requested

5 Remarks/Comments

VOC
Archive all analytes
- Do not run

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	VOC (38 list)	TOC	Sulfate	Nitrate	Nitrite	AMEE	Total Iron	Dissolved Iron			-WHL	HOLD for Analysis	5 Remarks/Comments
E-2-0820	8/12/20	1600	H_2O	11	X	X	X	X		X	X	X					
E-3-0820		1150		11	X	X	X	X		X	X	X					
E-4-0820		1030		11	X	X	X	X		X	X	X					
E-8-0820		1520		3	X												
E-11-0820		1420		9	X	X	X	X		X							
E-12-0820		1115		9	X	X	X	X	X	X							
E-15-0820		0940		9	X	X	X	X		X							
E-16-0820		0910		9	X	X	X	X		X							
BOP-78;-0820		0940		3	X											X	~~Hold VOC~~ Archive
BOP-79;-0820		0925		3	X											X	~~Hold VOC~~ Archive
BOP-84;-0820		0955		3	X											X	~~Hold VOC~~ Archive
BOP-85;-0820		1025		3	X											X	~~Hold VOC~~ Archive
BOP-87;-0820		1040		3	X											X	~~Hold VOC~~ Archive
BOP-88;-0820	↓	1248	↓	11	X	X	X	X	·	X	X	X				X	~~Hold VOC~~ Archive
Trip Blanks	—	—	H_2O	2	X												-WHL

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
[signature]	8/14 16:43		
[signature]			
		Julissa R.	8/14/20 11:36

Relinquished by commercial carrier (circle): UPS FedEx Other: _____
Temperature upon Receipt: 3.2 °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.

JR NP

9/15/2020

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____ For Eurofins Lancaster Laboratories Environmental use only Group # _____ Sample # _____
Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Gresham Oregon
Site Project: Boeing of Portland
Site Program/#: 00251116.120.412
Boeing PM: Debbie Taege
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL/GJN # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) VOC (38 list)	TOC	Sulfate	Nitrate	Nitrite	AMEE	Total Iron	Dissolved Iron				HOLD for Analysis	(5) Remarks/Comments
																	A VOC
E-2-0820	8/12/20	1600	H_2O	11	X	X	X	X		X	X	X					
E-3-0820		1150		11	X	X	X	X		X	X	X					
E-4-0820		1030		11	X	X	X	X		X	X	X					
E-8-0820		1520		3	X												
E-11-0820		1420		9	X	X	X	X		X							
E-12-0820		1115		9	X	X	X	X	X	X							
E-15-0820		0940		9	X	X	X	X		X							
E-16-0820		0910		9	X	X	X	X		X							
BOP-78;-0820		0940		3	X											X	Hold VOC
BOP-79;-0820		0925		3	X											X	Hold VOC
BOP-84;-0820		0955		3	X											X	Hold VOC
BOP-85;-0820		1025		3	X											X	Hold VOC
BOP-87;-0820		1040		3	X											X	Hold VOC
BOP-88;-0820	↓	1248	↓	11	X	X	X	X	·	X	X	X				X	Hold VOC
Trip Blanks	—	—	H_2O	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 (7)
Wolfgang Lenz	8/14 16:45		
Wolfgang Lenz			
		Julissa R	8/14/20 11:30

Relinquished by commercial carrier (circle): UPS FedEx Other: _____
Temperature upon Receipt: _____ °C 3.2
Custody Seals Intact? (Yes) No

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.

JR N/R

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-10700 Chain of Custody

Use only _____

1 Client Information

Site Location: Gresham Oregon
Site Project: Boeing of Portland
Site Program/#: 00251116.120.412
Boeing PM: Debbie Jaeger
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL/GJN # of Coolers: 1

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	VOC (38 list)	TOC	Sulfate	Nitrate	Nitrite	AMEE	Total Iron	Dissolved Iron			-WHL	HOLD for Analysis	5 Remarks/Comments
E-2-0820	8/12/20	1600	H_2O	11	X	X	X	X		X	X	X					VOC Archive all analytes - Do not run
E-3-0820		1150		11	X	X	X	X		X	X	X					
E-4-0820		1030		11	X	X	X	X		X	X	X					
E-9-0820		1520		3	X												
E-11-0820		1420		9	X	X	X	X		X							
E-12-0820		1115		9	X	X	X	X	X	X							
E-15-0820		0940		9	X	X	X	X		X							
E-16-0820		0910		9	X	X	X	X		X							
BOP-78;-0820		0940		3	X											X	~~Hold VOC~~ Archive
BOP-79;-0820		0925		3	X											X	~~Hold VOC~~ Archive
BOP-84;-0820		0955		3	X											X	~~Hold VOC~~ Archive
BOP-85;-0820		1025		3	X											X	~~Hold VOC~~ Archive
BOP-87;-0820		1040		3	X											X	~~Hold VOC~~ Archive
BOP-88;-0820	↓	1248	↓	11	X	X	X	X	·	X	X	X				X	~~Hold VOC~~ Archive
Trip Blanks	—	—	H_2O	2	X												-WHL

4 Analyses Requested

5 Remarks/Comments

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
[signature]	8/14 16:43		
[signature]	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: Julissa R.	Date/Time 8/14/20 11:36

Relinquished by commercial carrier (circle): UPS FedEx Other: _____
Temperature upon Receipt: 3.2 °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.

JR

9/15/2020

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____ For Eurofins Lancaster Laboratories Environmental use only Group # _____ Sample # _____

Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Gresham Oregon
Site Project: Boeing of Portland
Site Program/#: 0025116.120.412
Boeing PM: Debbie Taege
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL/GJN # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: VOC (38 list)	TOC	Sulfate	Nitrate	Nitrite	AMEE	Total Iron	Dissolved Iron				HOLD for Analysis	(5) Remarks/Comments
																	HOLD for Analysis: VOC
E-2-0820	8/12/20	1600	H_2O	11	X	X	X	X		X	X	X					
E-3-0820		1150		11	X	X	X	X		X	X	X					
E-4-0820		1030		11	X	X	X	X		X	X	X					
E-9-0820		1520		3	X												
E-11-0820		1420		9	X	X	X	X		X							
E-12-0820		1115		9	X	X	X	X	X	X							
E-15-0820		0940		9	X	X	X	X		X							
E-16-0820		0910		9	X	X	X	X		X							
BOP-78;-0820		0940		3	X											X	Hold VOC
BOP-79;-0820		0925		3	X											X	Hold VOC
BOP-84;-0820		0955		3	X											X	Hold VOC
BOP-85;-0820		1025		3	X											X	Hold VOC
BOP-87;-0820		1040		3	X											X	Hold VOC
BOP-88;-0820	↓	1248	↓	11	X	X	X	X	·	X	X	X				X	Hold VOC
Trip Blanks	—	—	H_2O	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 (7)
Wolfgang Lenz	8/14 16:45		
Relinquished by:	Date/Time	Received by:	Date/Time
Wolfgang Lenz			
Relinquished by:	Date/Time	Received by:	Date/Time
		Julissa R	8/14/20 11:30

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

Temperature upon Receipt: _____ °C 3.2

Custody Seals Intact?: (Yes) No

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.

JR

9/15/2020

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 410-10700-1

Login Number: 10700
List Number: 1
Creator: Rivera-Santa, Julissa

List Source: Eurofins Lancaster Laboratories Env

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.	True	
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	

eurofins | Environment Testing America



ANALYTICAL REPORT

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

Laboratory Job ID: 410-10702-1
Client Project/Site: Boeing of Portland/0025116.120.412

For:
Landau & Associates, Inc.
Sound View Plaza, 130 2nd Ave S
Edmonds, Washington 98020-9129

Attn: Chris Kimmel

Authorized for release by:
9/15/2020 12:17:44 PM

Kay Hower, Principal Project Manager
(717)556-7364
kayhower@eurofinsus.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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 recoveries that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result.

* 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 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. 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 LANACASTER 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. 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.



Kay Hower
Principal Project Manager
9/15/2020 12:17:44 PM

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 6
Detection Summary 7
Client Sample Results 10
Surrogate Summary 24
QC Sample Results 26
QC Association Summary 39
Lab Chronicle 44
Certification Summary 47
Method Summary 48
Sample Summary 49
Chain of Custody 50
Receipt Checklists 51

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate recovery exceeds control limits

GC VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

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

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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: 410-10702-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-10702-1

Receipt
The samples were received on 8/14/2020 11:10 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was -0.9º C.

GC/MS VOA
Method 8260C LL: The continuing calibration verification (CCV) associated with batch 410-37329 recovered outside acceptance criteria, low biased, for Bromomethane and Vinyl chloride. 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.

HPLC/IC
Method 300.0: Due to laboratory error, sample(s) were analyzed at the standard dilution factor of 5 instead of client requesting dilution factor of 1 for Nitrate. The following samples were re-analyzed at the correct dilution factor outside of the analytical holding time: BOP-72i-0820 (410-10702-1), BOP-75i-0820 (410-10702-2), BOP-80i-0820 (410-10702-3) and BOP-82i-0820 (410-10702-5).

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

GC VOA
Method RSK-175: The continuing calibration verification (CCV) associated with batch 410-33556 recovered above the upper control limit for Acetylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: BOP-81i-0820 (410-10702-4), BOP-82i-0820 (410-10702-5) and BOP-83i-0820 (410-10702-6).

Method RSK-175: The continuing calibration verification (CCV) associated with batch 410-33556 recovered above the upper control limit for Acetylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: BOP-72i-0820 (410-10702-1), BOP-75i-0820 (410-10702-2) and BOP-80i-0820 (410-10702-3).

Method RSK-175: The following sample(s) were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was 4 when verified by the laboratory: BOP-72i-0820 (410-10702-1).

Method RSK-175: The method requirement for no headspace was not met. The following volatile sample was analyzed with significant headspace in the sample container(s): BOP-81i-0820 (410-10702-4). Significant headspace is defined as a bubble greater than 6 mm in diameter.

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

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

General Chemistry
Method SM 5310C: The reference method requires samples to be preserved to a pH of <2. The following sample(s) were received with insufficient preservation at a pH of 5: BOP-72i-0820 (410-10702-1). The sample(s) were preserved to the appropriate pH in the laboratory.

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

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

Detection Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10702-1

Client Sample ID: BOP-72i-0820 — Lab Sample ID: 410-10702-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.722		0.500		ug/L	1		8260C LL	Total/NA
2-Butanone	85.3		5.00		ug/L	1		8260C LL	Total/NA
2-Hexanone	13.5		5.00		ug/L	1		8260C LL	Total/NA
Acetone	13.9		5.00		ug/L	1		8260C LL	Total/NA
Benzene	0.354		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	1.11		0.200		ug/L	1		8260C LL	Total/NA
Toluene	1.45		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.832		0.200		ug/L	1		8260C LL	Total/NA
Methane (1C)	12700	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	18000		500	300	ug/L	100		RSK-175	Total/NA
Sulfate	48.0		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
Iron	229		0.200		mg/L	1		6010D	Total Recoverable
Iron	224		0.206		mg/L	1		6010D	Dissolved
Total Organic Carbon	2200		100		mg/L	100		5310C-2011	Total/NA

Client Sample ID: BOP-75i-0820 — Lab Sample ID: 410-10702-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1,2,2-Tetrachloroethane	0.765		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone	2150	E	5.00		ug/L	1		8260C LL	Total/NA
2-Hexanone	43.0		5.00		ug/L	1		8260C LL	Total/NA
Acetone	238		5.00		ug/L	1		8260C LL	Total/NA
Benzene	1.68		0.200		ug/L	1		8260C LL	Total/NA
Carbon disulfide	0.709		0.500		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	0.970		0.200		ug/L	1		8260C LL	Total/NA
Toluene	1.42		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	0.402		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.214		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone - DL	1160		100		ug/L	20		8260C LL	Total/NA
Methane (1C)	14200	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	19000		500	300	ug/L	100		RSK-175	Total/NA
Sulfate	49.6		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
Iron	191		0.200		mg/L	1		6010D	Total Recoverable
Iron	184		0.206		mg/L	1		6010D	Dissolved
Total Organic Carbon	3620		250		mg/L	250		5310C-2011	Total/NA

Client Sample ID: BOP-80i-0820 — Lab Sample ID: 410-10702-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	6.14		0.500		ug/L	1		8260C LL	Total/NA
1,1-Dichloroethene	9.85		0.200		ug/L	1		8260C LL	Total/NA
Acetone	28.5		5.00		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	205	E	0.200		ug/L	1		8260C LL	Total/NA
trans-1,2-Dichloroethene	2.53		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	255	E	0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	23.2		0.200		ug/L	1		8260C LL	Total/NA
1,1-Dichloroethene - DL	9.78		4.00		ug/L	20		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	289		4.00		ug/L	20		8260C LL	Total/NA
trans-1,2-Dichloroethene - DL	5.42		4.00		ug/L	20		8260C LL	Total/NA
Trichloroethene - DL	257		4.00		ug/L	20		8260C LL	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BOP-80i-0820 (Continued) — Lab Sample ID: 410-10702-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride - DL	6.42		4.00		ug/L	20		8260C LL	Total/NA
Methane (1C)	3760	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	4400		100	60	ug/L	20		RSK-175	Total/NA
Sulfate	10.3		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
Iron	96.6		0.200		mg/L	1		6010D	Total Recoverable
Iron	23.4		0.206		mg/L	1		6010D	Dissolved
Total Organic Carbon	2.91		1.00		mg/L	1		5310C-2011	Total/NA

Client Sample ID: BOP-81i-0820 — Lab Sample ID: 410-10702-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	55.2		5.00		ug/L	1		8260C LL	Total/NA
Acetone	6.62		5.00		ug/L	1		8260C LL	Total/NA
Carbon disulfide	0.918		0.500		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	0.210		0.200		ug/L	1		8260C LL	Total/NA
Toluene	0.627		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.240		0.200		ug/L	1		8260C LL	Total/NA
Methane (1C)	18200	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	25000		500	300	ug/L	100		RSK-175	Total/NA
Nitrogen, Nitrate	3.79		0.500		mg/L	5		EPA 300.0 R2.1	Total/NA
Iron	187		0.200		mg/L	1		6010D	Total Recoverable
Iron	15.3		0.206		mg/L	1		6010D	Dissolved
Total Organic Carbon	48.9		1.00		mg/L	1		5310C-2011	Total/NA

Client Sample ID: BOP-82i-0820 — Lab Sample ID: 410-10702-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.910		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone	12.9		5.00		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	1.83		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	1.31		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.398		0.200		ug/L	1		8260C LL	Total/NA
Methane (1C)	926	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	940		25	15	ug/L	5		RSK-175	Total/NA
Sulfate	10.8		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
Iron	18.7		0.200		mg/L	1		6010D	Total Recoverable
Iron	9.42		0.206		mg/L	1		6010D	Dissolved
Total Organic Carbon	16.5		1.00		mg/L	1		5310C-2011	Total/NA

Client Sample ID: BOP-83i-0820 — Lab Sample ID: 410-10702-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.352		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	7.24		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	2.27		0.200		ug/L	1		8260C LL	Total/NA
Methane (1C)	131		5.00		ug/L	1		RSK-175	Total/NA
Nitrogen, Nitrate	0.792		0.500		mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	7.39		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
Iron	8.41		0.200		mg/L	1		6010D	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Landau & Associates, Inc.
Job ID: 410-10702-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: BOP-83i-0820 (Continued)
Lab Sample ID: 410-10702-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Iron	1.71		0.206		mg/L	1		6010D	Dissolved
Total Organic Carbon	1.49		1.00		mg/L	1		5310C-2011	Total/NA

Client Sample ID: Trip blanks
Lab Sample ID: 410-10702-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10702-1

Client Sample ID: BOP-72i-0820

Date Collected: 08/13/20 15:16
Date Received: 08/14/20 11:10

Lab Sample ID: 410-10702-1

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			08/24/20 16:06	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/24/20 16:06	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/24/20 16:06	1
1,1-Dichloroethane	**0.722**		0.500		ug/L			08/24/20 16:06	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 16:06	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/24/20 16:06	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/24/20 16:06	1
2-Butanone	**85.3**		5.00		ug/L			08/24/20 16:06	1
2-Hexanone	**13.5**		5.00		ug/L			08/24/20 16:06	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/24/20 16:06	1
Acetone	**13.9**		5.00		ug/L			08/24/20 16:06	1
Benzene	**0.354**		0.200		ug/L			08/24/20 16:06	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/24/20 16:06	1
Bromoform	1.00	U	1.00		ug/L			08/24/20 16:06	1
Bromomethane	0.500	U	0.500		ug/L			08/24/20 16:06	1
Carbon disulfide	0.500	U	0.500		ug/L			08/24/20 16:06	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/24/20 16:06	1
Chlorobenzene	0.500	U	0.500		ug/L			08/24/20 16:06	1
Chloroethane	0.500	U	0.500		ug/L			08/24/20 16:06	1
Chloroform	0.200	U	0.200		ug/L			08/24/20 16:06	1
Chloromethane	0.500	U	0.500		ug/L			08/24/20 16:06	1
cis-1,2-Dichloroethene	**1.11**		0.200		ug/L			08/24/20 16:06	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 16:06	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/24/20 16:06	1
Ethylbenzene	0.500	U	0.500		ug/L			08/24/20 16:06	1
Freon 113	0.500	U	0.500		ug/L			08/24/20 16:06	1
m&p-Xylene	0.500	U	0.500		ug/L			08/24/20 16:06	1
Methylene Chloride	0.500	U	0.500		ug/L			08/24/20 16:06	1
o-Xylene	0.500	U	0.500		ug/L			08/24/20 16:06	1
Styrene	0.500	U	0.500		ug/L			08/24/20 16:06	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/24/20 16:06	1
Toluene	**1.45**		0.200		ug/L			08/24/20 16:06	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 16:06	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 16:06	1
Trichloroethene	0.200	U	0.200		ug/L			08/24/20 16:06	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/24/20 16:06	1
Vinyl acetate	0.500	U	0.500		ug/L			08/24/20 16:06	1
Vinyl chloride	**0.832**		0.200		ug/L			08/24/20 16:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*08/24/20 16:06*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/24/20 16:06*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*08/24/20 16:06*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*08/24/20 16:06*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 16:01	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 16:01	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 16:01	1

Client Sample ID: BOP-72i-0820

Date Collected: 08/13/20 15:16
Date Received: 08/14/20 11:10

Lab Sample ID: 410-10702-1
Matrix: Water

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**12700**	**E**	5.00		ug/L		08/15/20 10:04	08/15/20 16:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*66*		*28 - 140*	*08/15/20 10:04*	*08/15/20 16:01*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	<500		500	100	ug/L		08/17/20 09:03	08/17/20 19:22	100
Ethane (1C)	<500		500	100	ug/L		08/17/20 09:03	08/17/20 19:22	100
Ethene (1C)	<500		500	100	ug/L		08/17/20 09:03	08/17/20 19:22	100
Methane (1C)	**18000**		500	300	ug/L		08/17/20 09:03	08/17/20 19:22	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*72*		*28 - 140*	*08/17/20 09:03*	*08/17/20 19:22*	*100*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.500	U	0.500		mg/L			08/15/20 01:29	5
Nitrogen, Nitrate	0.100	U H F1	0.100		mg/L			09/12/20 15:25	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**48.0**		5.00		mg/L			08/15/20 01:29	5

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**229**		0.200		mg/L		08/15/20 11:06	08/20/20 10:54	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**224**		0.206		mg/L		08/18/20 06:22	08/26/20 08:28	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**2200**		100		mg/L			08/20/20 17:47	100

Client Sample ID: BOP-75i-0820

Date Collected: 08/13/20 14:19
Date Received: 08/14/20 11:10

Lab Sample ID: 410-10702-2
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			08/24/20 16:27	1
1,1,2,2-Tetrachloroethane	**0.765**		0.200		ug/L			08/24/20 16:27	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/24/20 16:27	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/24/20 16:27	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 16:27	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/24/20 16:27	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/24/20 16:27	1
2-Butanone	**2150**	**E**	5.00		ug/L			08/24/20 16:27	1
2-Hexanone	**43.0**		5.00		ug/L			08/24/20 16:27	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/24/20 16:27	1

Client Sample ID: BOP-75i-0820

Date Collected: 08/13/20 14:19
Date Received: 08/14/20 11:10

Lab Sample ID: 410-10702-2

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**238**		5.00		ug/L			08/24/20 16:27	1
Benzene	**1.68**		0.200		ug/L			08/24/20 16:27	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/24/20 16:27	1
Bromoform	1.00	U	1.00		ug/L			08/24/20 16:27	1
Bromomethane	0.500	U	0.500		ug/L			08/24/20 16:27	1
Carbon disulfide	**0.709**		0.500		ug/L			08/24/20 16:27	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/24/20 16:27	1
Chlorobenzene	0.500	U	0.500		ug/L			08/24/20 16:27	1
Chloroethane	0.500	U	0.500		ug/L			08/24/20 16:27	1
Chloroform	0.200	U	0.200		ug/L			08/24/20 16:27	1
Chloromethane	0.500	U	0.500		ug/L			08/24/20 16:27	1
cis-1,2-Dichloroethene	**0.970**		0.200		ug/L			08/24/20 16:27	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 16:27	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/24/20 16:27	1
Ethylbenzene	0.500	U	0.500		ug/L			08/24/20 16:27	1
Freon 113	0.500	U	0.500		ug/L			08/24/20 16:27	1
m&p-Xylene	0.500	U	0.500		ug/L			08/24/20 16:27	1
Methylene Chloride	0.500	U	0.500		ug/L			08/24/20 16:27	1
o-Xylene	0.500	U	0.500		ug/L			08/24/20 16:27	1
Styrene	0.500	U	0.500		ug/L			08/24/20 16:27	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/24/20 16:27	1
Toluene	**1.42**		0.200		ug/L			08/24/20 16:27	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 16:27	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 16:27	1
Trichloroethene	**0.402**		0.200		ug/L			08/24/20 16:27	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/24/20 16:27	1
Vinyl acetate	0.500	U	0.500		ug/L			08/24/20 16:27	1
Vinyl chloride	**0.214**		0.200		ug/L			08/24/20 16:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*08/24/20 16:27*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*08/24/20 16:27*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*08/24/20 16:27*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*08/24/20 16:27*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	10.0	U	10.0		ug/L			08/26/20 17:30	20
1,1,2,2-Tetrachloroethane	4.00	U	4.00		ug/L			08/26/20 17:30	20
1,1,2-Trichloroethane	4.00	U	4.00		ug/L			08/26/20 17:30	20
1,1-Dichloroethane	10.0	U	10.0		ug/L			08/26/20 17:30	20
1,1-Dichloroethene	4.00	U	4.00		ug/L			08/26/20 17:30	20
1,2-Dichloroethane	4.00	U	4.00		ug/L			08/26/20 17:30	20
1,2-Dichloropropane	10.0	U	10.0		ug/L			08/26/20 17:30	20
2-Butanone	**1160**		100		ug/L			08/26/20 17:30	20
2-Hexanone	100	U	100		ug/L			08/26/20 17:30	20
4-Methyl-2-pentanone	100	U	100		ug/L			08/26/20 17:30	20
Acetone	100	U	100		ug/L			08/26/20 17:30	20
Benzene	4.00	U	4.00		ug/L			08/26/20 17:30	20
Bromodichloromethane	10.0	U	10.0		ug/L			08/26/20 17:30	20

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10702-1

Client Sample ID: BOP-75i-0820

Date Collected: 08/13/20 14:19
Date Received: 08/14/20 11:10

Lab Sample ID: 410-10702-2

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	20.0	U	20.0		ug/L			08/26/20 17:30	20
Bromomethane	10.0	U	10.0		ug/L			08/26/20 17:30	20
Carbon disulfide	10.0	U	10.0		ug/L			08/26/20 17:30	20
Carbon tetrachloride	4.00	U	4.00		ug/L			08/26/20 17:30	20
Chlorobenzene	10.0	U	10.0		ug/L			08/26/20 17:30	20
Chloroethane	10.0	U	10.0		ug/L			08/26/20 17:30	20
Chloroform	4.00	U	4.00		ug/L			08/26/20 17:30	20
Chloromethane	10.0	U	10.0		ug/L			08/26/20 17:30	20
cis-1,2-Dichloroethene	4.00	U	4.00		ug/L			08/26/20 17:30	20
cis-1,3-Dichloropropene	4.00	U	4.00		ug/L			08/26/20 17:30	20
Dibromochloromethane	10.0	U	10.0		ug/L			08/26/20 17:30	20
Ethylbenzene	10.0	U	10.0		ug/L			08/26/20 17:30	20
Freon 113	10.0	U	10.0		ug/L			08/26/20 17:30	20
m&p-Xylene	10.0	U	10.0		ug/L			08/26/20 17:30	20
Methylene Chloride	10.0	U	10.0		ug/L			08/26/20 17:30	20
o-Xylene	10.0	U	10.0		ug/L			08/26/20 17:30	20
Styrene	10.0	U	10.0		ug/L			08/26/20 17:30	20
Tetrachloroethene	4.00	U	4.00		ug/L			08/26/20 17:30	20
Toluene	4.00	U	4.00		ug/L			08/26/20 17:30	20
trans-1,2-Dichloroethene	4.00	U	4.00		ug/L			08/26/20 17:30	20
trans-1,3-Dichloropropene	4.00	U	4.00		ug/L			08/26/20 17:30	20
Trichloroethene	4.00	U	4.00		ug/L			08/26/20 17:30	20
Trichlorofluoromethane	10.0	U	10.0		ug/L			08/26/20 17:30	20
Vinyl acetate	10.0	U	10.0		ug/L			08/26/20 17:30	20
Vinyl chloride	4.00	U	4.00		ug/L			08/26/20 17:30	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*08/26/20 17:30*	*20*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*08/26/20 17:30*	*20*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*08/26/20 17:30*	*20*
Toluene-d8 (Surr)	*110*		*80 - 120*		*08/26/20 17:30*	*20*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 16:19	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 16:19	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 16:19	1
Methane (1C)	**14200**	**E**	5.00		ug/L		08/15/20 10:04	08/15/20 16:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*77*		*28 - 140*	*08/15/20 10:04*	*08/15/20 16:19*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	<500		500	100	ug/L		08/17/20 09:03	08/17/20 19:40	100
Ethane (1C)	<500		500	100	ug/L		08/17/20 09:03	08/17/20 19:40	100
Ethene (1C)	<500		500	100	ug/L		08/17/20 09:03	08/17/20 19:40	100
Methane (1C)	**19000**		500	300	ug/L		08/17/20 09:03	08/17/20 19:40	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*70*		*28 - 140*	*08/17/20 09:03*	*08/17/20 19:40*	*100*

Client Sample ID: BOP-75i-0820 — Lab Sample ID: 410-10702-2

Date Collected: 08/13/20 14:19 — **Matrix: Water**
Date Received: 08/14/20 11:10

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.500	U	0.500		mg/L			08/14/20 23:29	5
Nitrogen, Nitrate	0.100	U H	0.100		mg/L			09/12/20 14:49	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**49.6**		5.00		mg/L			08/14/20 23:29	5

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**191**		0.200		mg/L		08/18/20 03:05	08/19/20 13:04	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**184**		0.206		mg/L		08/18/20 06:22	08/26/20 08:48	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**3620**		250		mg/L			08/20/20 18:00	250

Client Sample ID: BOP-80i-0820 — Lab Sample ID: 410-10702-3

Date Collected: 08/13/20 13:20 — **Matrix: Water**
Date Received: 08/14/20 11:10

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			08/24/20 16:48	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/24/20 16:48	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/24/20 16:48	1
1,1-Dichloroethane	**6.14**		0.500		ug/L			08/24/20 16:48	1
1,1-Dichloroethene	**9.85**		0.200		ug/L			08/24/20 16:48	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/24/20 16:48	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/24/20 16:48	1
2-Butanone	5.00	U	5.00		ug/L			08/24/20 16:48	1
2-Hexanone	5.00	U	5.00		ug/L			08/24/20 16:48	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/24/20 16:48	1
Acetone	**28.5**		5.00		ug/L			08/24/20 16:48	1
Benzene	0.200	U	0.200		ug/L			08/24/20 16:48	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/24/20 16:48	1
Bromoform	1.00	U	1.00		ug/L			08/24/20 16:48	1
Bromomethane	0.500	U	0.500		ug/L			08/24/20 16:48	1
Carbon disulfide	0.500	U	0.500		ug/L			08/24/20 16:48	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/24/20 16:48	1
Chlorobenzene	0.500	U	0.500		ug/L			08/24/20 16:48	1
Chloroethane	0.500	U	0.500		ug/L			08/24/20 16:48	1
Chloroform	0.200	U	0.200		ug/L			08/24/20 16:48	1
Chloromethane	0.500	U	0.500		ug/L			08/24/20 16:48	1
cis-1,2-Dichloroethene	**205**	**E**	0.200		ug/L			08/24/20 16:48	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 16:48	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/24/20 16:48	1
Ethylbenzene	0.500	U	0.500		ug/L			08/24/20 16:48	1
Freon 113	0.500	U	0.500		ug/L			08/24/20 16:48	1

Client: Landau & Associates, Inc.
Job ID: 410-10702-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: BOP-80i-0820
Lab Sample ID: 410-10702-3
Date Collected: 08/13/20 13:20
Matrix: Water
Date Received: 08/14/20 11:10

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
m&p-Xylene	0.500	U	0.500		ug/L			08/24/20 16:48	1
Methylene Chloride	0.500	U	0.500		ug/L			08/24/20 16:48	1
o-Xylene	0.500	U	0.500		ug/L			08/24/20 16:48	1
Styrene	0.500	U	0.500		ug/L			08/24/20 16:48	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/24/20 16:48	1
Toluene	0.200	U	0.200		ug/L			08/24/20 16:48	1
trans-1,2-Dichloroethene	**2.53**		0.200		ug/L			08/24/20 16:48	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 16:48	1
Trichloroethene	**255**	**E**	0.200		ug/L			08/24/20 16:48	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/24/20 16:48	1
Vinyl acetate	0.500	U	0.500		ug/L			08/24/20 16:48	1
Vinyl chloride	**23.2**		0.200		ug/L			08/24/20 16:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*08/24/20 16:48*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/24/20 16:48*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*08/24/20 16:48*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*08/24/20 16:48*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	10.0	U	10.0		ug/L			08/26/20 17:51	20
1,1,2,2-Tetrachloroethane	4.00	U	4.00		ug/L			08/26/20 17:51	20
1,1,2-Trichloroethane	4.00	U	4.00		ug/L			08/26/20 17:51	20
1,1-Dichloroethane	10.0	U	10.0		ug/L			08/26/20 17:51	20
1,1-Dichloroethene	**9.78**		4.00		ug/L			08/26/20 17:51	20
1,2-Dichloroethane	4.00	U	4.00		ug/L			08/26/20 17:51	20
1,2-Dichloropropane	10.0	U	10.0		ug/L			08/26/20 17:51	20
2-Butanone	100	U	100		ug/L			08/26/20 17:51	20
2-Hexanone	100	U	100		ug/L			08/26/20 17:51	20
4-Methyl-2-pentanone	100	U	100		ug/L			08/26/20 17:51	20
Acetone	100	U	100		ug/L			08/26/20 17:51	20
Benzene	4.00	U	4.00		ug/L			08/26/20 17:51	20
Bromodichloromethane	10.0	U	10.0		ug/L			08/26/20 17:51	20
Bromoform	20.0	U	20.0		ug/L			08/26/20 17:51	20
Bromomethane	10.0	U	10.0		ug/L			08/26/20 17:51	20
Carbon disulfide	10.0	U	10.0		ug/L			08/26/20 17:51	20
Carbon tetrachloride	4.00	U	4.00		ug/L			08/26/20 17:51	20
Chlorobenzene	10.0	U	10.0		ug/L			08/26/20 17:51	20
Chloroethane	10.0	U	10.0		ug/L			08/26/20 17:51	20
Chloroform	4.00	U	4.00		ug/L			08/26/20 17:51	20
Chloromethane	10.0	U	10.0		ug/L			08/26/20 17:51	20
cis-1,2-Dichloroethene	**289**		4.00		ug/L			08/26/20 17:51	20
cis-1,3-Dichloropropene	4.00	U	4.00		ug/L			08/26/20 17:51	20
Dibromochloromethane	10.0	U	10.0		ug/L			08/26/20 17:51	20
Ethylbenzene	10.0	U	10.0		ug/L			08/26/20 17:51	20
Freon 113	10.0	U	10.0		ug/L			08/26/20 17:51	20
m&p-Xylene	10.0	U	10.0		ug/L			08/26/20 17:51	20
Methylene Chloride	10.0	U	10.0		ug/L			08/26/20 17:51	20
o-Xylene	10.0	U	10.0		ug/L			08/26/20 17:51	20

Client Sample ID: BOP-80i-0820

Date Collected: 08/13/20 13:20
Date Received: 08/14/20 11:10

Lab Sample ID: 410-10702-3

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	10.0	U	10.0		ug/L			08/26/20 17:51	20
Tetrachloroethene	4.00	U	4.00		ug/L			08/26/20 17:51	20
Toluene	4.00	U	4.00		ug/L			08/26/20 17:51	20
trans-1,2-Dichloroethene	**5.42**		4.00		ug/L			08/26/20 17:51	20
trans-1,3-Dichloropropene	4.00	U	4.00		ug/L			08/26/20 17:51	20
Trichloroethene	**257**		4.00		ug/L			08/26/20 17:51	20
Trichlorofluoromethane	10.0	U	10.0		ug/L			08/26/20 17:51	20
Vinyl acetate	10.0	U	10.0		ug/L			08/26/20 17:51	20
Vinyl chloride	**6.42**		4.00		ug/L			08/26/20 17:51	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*08/26/20 17:51*	*20*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*08/26/20 17:51*	*20*
4-Bromofluorobenzene (Surr)	*109*		*80 - 120*		*08/26/20 17:51*	*20*
Toluene-d8 (Surr)	*114*		*80 - 120*		*08/26/20 17:51*	*20*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 16:37	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 16:37	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 16:37	1
Methane (1C)	**3760**	**E**	5.00		ug/L		08/15/20 10:04	08/15/20 16:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*91*		*28 - 140*	*08/15/20 10:04*	*08/15/20 16:37*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	<100		100	20	ug/L		08/17/20 09:03	08/17/20 19:58	20
Ethane (1C)	<100		100	20	ug/L		08/17/20 09:03	08/17/20 19:58	20
Ethene (1C)	<100		100	20	ug/L		08/17/20 09:03	08/17/20 19:58	20
Methane (1C)	**4400**		100	60	ug/L		08/17/20 09:03	08/17/20 19:58	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*72*		*28 - 140*	*08/17/20 09:03*	*08/17/20 19:58*	*20*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.500	U	0.500		mg/L			08/15/20 00:54	5
Nitrogen, Nitrate	0.100	U H	0.100		mg/L			09/12/20 14:31	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**10.3**		5.00		mg/L			08/15/20 00:54	5

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**96.6**		0.200		mg/L		08/15/20 11:06	08/20/20 10:57	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**23.4**		0.206		mg/L		08/15/20 14:12	08/17/20 22:57	1

Client Sample ID: BOP-80i-0820 Lab Sample ID: 410-10702-3

Date Collected: 08/13/20 13:20 **Matrix: Water**
Date Received: 08/14/20 11:10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**2.91**		1.00		mg/L			08/19/20 20:04	1

Client Sample ID: BOP-81i-0820 Lab Sample ID: 410-10702-4

Date Collected: 08/13/20 12:25 **Matrix: Water**
Date Received: 08/14/20 11:10

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			08/24/20 17:09	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/24/20 17:09	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/24/20 17:09	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/24/20 17:09	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 17:09	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/24/20 17:09	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/24/20 17:09	1
2-Butanone	**55.2**		5.00		ug/L			08/24/20 17:09	1
2-Hexanone	5.00	U	5.00		ug/L			08/24/20 17:09	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/24/20 17:09	1
Acetone	**6.62**		5.00		ug/L			08/24/20 17:09	1
Benzene	0.200	U	0.200		ug/L			08/24/20 17:09	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/24/20 17:09	1
Bromoform	1.00	U	1.00		ug/L			08/24/20 17:09	1
Bromomethane	0.500	U	0.500		ug/L			08/24/20 17:09	1
Carbon disulfide	**0.918**		0.500		ug/L			08/24/20 17:09	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/24/20 17:09	1
Chlorobenzene	0.500	U	0.500		ug/L			08/24/20 17:09	1
Chloroethane	0.500	U	0.500		ug/L			08/24/20 17:09	1
Chloroform	0.200	U	0.200		ug/L			08/24/20 17:09	1
Chloromethane	0.500	U	0.500		ug/L			08/24/20 17:09	1
cis-1,2-Dichloroethene	**0.210**		0.200		ug/L			08/24/20 17:09	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 17:09	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/24/20 17:09	1
Ethylbenzene	0.500	U	0.500		ug/L			08/24/20 17:09	1
Freon 113	0.500	U	0.500		ug/L			08/24/20 17:09	1
m&p-Xylene	0.500	U	0.500		ug/L			08/24/20 17:09	1
Methylene Chloride	0.500	U	0.500		ug/L			08/24/20 17:09	1
o-Xylene	0.500	U	0.500		ug/L			08/24/20 17:09	1
Styrene	0.500	U	0.500		ug/L			08/24/20 17:09	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/24/20 17:09	1
Toluene	**0.627**		0.200		ug/L			08/24/20 17:09	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 17:09	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 17:09	1
Trichloroethene	0.200	U	0.200		ug/L			08/24/20 17:09	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/24/20 17:09	1
Vinyl acetate	0.500	U	0.500		ug/L			08/24/20 17:09	1
Vinyl chloride	**0.240**		0.200		ug/L			08/24/20 17:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*08/24/20 17:09*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/24/20 17:09*	*1*

Client Sample ID: BOP-81i-0820

Date Collected: 08/13/20 12:25
Date Received: 08/14/20 11:10

Lab Sample ID: 410-10702-4
Matrix: Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*08/24/20 17:09*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*08/24/20 17:09*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:06	08/15/20 18:44	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:06	08/15/20 18:44	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:06	08/15/20 18:44	1
Methane (1C)	**18200**	**E**	5.00		ug/L		08/15/20 10:06	08/15/20 18:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	*66*		*28 - 140*	*08/15/20 10:06*	*08/15/20 18:44*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	<500		500	100	ug/L		08/17/20 09:03	08/17/20 20:16	100
Ethane (1C)	<500		500	100	ug/L		08/17/20 09:03	08/17/20 20:16	100
Ethene (1C)	<500		500	100	ug/L		08/17/20 09:03	08/17/20 20:16	100
Methane (1C)	**25000**		500	300	ug/L		08/17/20 09:03	08/17/20 20:16	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	*72*		*28 - 140*	*08/17/20 09:03*	*08/17/20 20:16*	*100*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**3.79**		0.500		mg/L			08/14/20 23:12	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.00	U	5.00		mg/L			08/14/20 23:12	5

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**187**		0.200		mg/L		08/15/20 11:10	08/20/20 20:37	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**15.3**		0.206		mg/L		08/15/20 14:12	08/17/20 23:00	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**48.9**		1.00		mg/L			08/19/20 20:17	1

Client Sample ID: BOP-82i-0820

Date Collected: 08/13/20 10:57
Date Received: 08/14/20 11:10

Lab Sample ID: 410-10702-5
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			08/24/20 17:30	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/24/20 17:30	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/24/20 17:30	1

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10702-1

Client Sample ID: BOP-82i-0820

Date Collected: 08/13/20 10:57
Date Received: 08/14/20 11:10

Lab Sample ID: 410-10702-5

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/24/20 17:30	1
1,1-Dichloroethene	**0.910**		0.200		ug/L			08/24/20 17:30	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/24/20 17:30	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/24/20 17:30	1
2-Butanone	**12.9**		5.00		ug/L			08/24/20 17:30	1
2-Hexanone	5.00	U	5.00		ug/L			08/24/20 17:30	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/24/20 17:30	1
Acetone	5.00	U	5.00		ug/L			08/24/20 17:30	1
Benzene	0.200	U	0.200		ug/L			08/24/20 17:30	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/24/20 17:30	1
Bromoform	1.00	U	1.00		ug/L			08/24/20 17:30	1
Bromomethane	0.500	U	0.500		ug/L			08/24/20 17:30	1
Carbon disulfide	0.500	U	0.500		ug/L			08/24/20 17:30	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/24/20 17:30	1
Chlorobenzene	0.500	U	0.500		ug/L			08/24/20 17:30	1
Chloroethane	0.500	U	0.500		ug/L			08/24/20 17:30	1
Chloroform	0.200	U	0.200		ug/L			08/24/20 17:30	1
Chloromethane	0.500	U	0.500		ug/L			08/24/20 17:30	1
cis-1,2-Dichloroethene	**1.83**		0.200		ug/L			08/24/20 17:30	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 17:30	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/24/20 17:30	1
Ethylbenzene	0.500	U	0.500		ug/L			08/24/20 17:30	1
Freon 113	0.500	U	0.500		ug/L			08/24/20 17:30	1
m&p-Xylene	0.500	U	0.500		ug/L			08/24/20 17:30	1
Methylene Chloride	0.500	U	0.500		ug/L			08/24/20 17:30	1
o-Xylene	0.500	U	0.500		ug/L			08/24/20 17:30	1
Styrene	0.500	U	0.500		ug/L			08/24/20 17:30	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/24/20 17:30	1
Toluene	0.200	U	0.200		ug/L			08/24/20 17:30	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 17:30	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 17:30	1
Trichloroethene	**1.31**		0.200		ug/L			08/24/20 17:30	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/24/20 17:30	1
Vinyl acetate	0.500	U	0.500		ug/L			08/24/20 17:30	1
Vinyl chloride	**0.398**		0.200		ug/L			08/24/20 17:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*08/24/20 17:30*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*08/24/20 17:30*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*08/24/20 17:30*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*08/24/20 17:30*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:06	08/15/20 19:02	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:06	08/15/20 19:02	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:06	08/15/20 19:02	1
Methane (1C)	**926**	**E**	5.00		ug/L		08/15/20 10:06	08/15/20 19:02	1

Client Sample ID: BOP-82i-0820

Date Collected: 08/13/20 10:57
Date Received: 08/14/20 11:10

Lab Sample ID: 410-10702-5

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*72*		*28 - 140*	*08/15/20 10:06*	*08/15/20 19:02*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	<25		25	5.0	ug/L		08/17/20 09:03	08/17/20 20:53	5
Ethane (1C)	<25		25	5.0	ug/L		08/17/20 09:03	08/17/20 20:53	5
Ethene (1C)	<25		25	5.0	ug/L		08/17/20 09:03	08/17/20 20:53	5
Methane (1C)	**940**		25	15	ug/L		08/17/20 09:03	08/17/20 20:53	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*64*		*28 - 140*	*08/17/20 09:03*	*08/17/20 20:53*	*5*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.500	U	0.500		mg/L			08/14/20 22:55	5
Nitrogen, Nitrate	0.100	U H	0.100		mg/L			09/12/20 14:13	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**10.8**		5.00		mg/L			08/14/20 22:55	5

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**18.7**		0.200		mg/L		08/15/20 11:10	08/20/20 20:41	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**9.42**		0.206		mg/L		08/15/20 14:12	08/17/20 23:03	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**16.5**		1.00		mg/L			08/19/20 20:58	1

Client Sample ID: BOP-83i-0820

Date Collected: 08/13/20 10:07
Date Received: 08/14/20 11:10

Lab Sample ID: 410-10702-6

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			08/24/20 17:52	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/24/20 17:52	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/24/20 17:52	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/24/20 17:52	1
1,1-Dichloroethene	**0.352**		0.200		ug/L			08/24/20 17:52	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/24/20 17:52	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/24/20 17:52	1
2-Butanone	5.00	U	5.00		ug/L			08/24/20 17:52	1
2-Hexanone	5.00	U	5.00		ug/L			08/24/20 17:52	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/24/20 17:52	1
Acetone	5.00	U	5.00		ug/L			08/24/20 17:52	1
Benzene	0.200	U	0.200		ug/L			08/24/20 17:52	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/24/20 17:52	1

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10702-1

Client Sample ID: BOP-83i-0820

Date Collected: 08/13/20 10:07
Date Received: 08/14/20 11:10

Lab Sample ID: 410-10702-6

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	1.00	U	1.00		ug/L			08/24/20 17:52	1
Bromomethane	0.500	U	0.500		ug/L			08/24/20 17:52	1
Carbon disulfide	0.500	U	0.500		ug/L			08/24/20 17:52	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/24/20 17:52	1
Chlorobenzene	0.500	U	0.500		ug/L			08/24/20 17:52	1
Chloroethane	0.500	U	0.500		ug/L			08/24/20 17:52	1
Chloroform	0.200	U	0.200		ug/L			08/24/20 17:52	1
Chloromethane	0.500	U	0.500		ug/L			08/24/20 17:52	1
cis-1,2-Dichloroethene	**7.24**		0.200		ug/L			08/24/20 17:52	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 17:52	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/24/20 17:52	1
Ethylbenzene	0.500	U	0.500		ug/L			08/24/20 17:52	1
Freon 113	0.500	U	0.500		ug/L			08/24/20 17:52	1
m&p-Xylene	0.500	U	0.500		ug/L			08/24/20 17:52	1
Methylene Chloride	0.500	U	0.500		ug/L			08/24/20 17:52	1
o-Xylene	0.500	U	0.500		ug/L			08/24/20 17:52	1
Styrene	0.500	U	0.500		ug/L			08/24/20 17:52	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/24/20 17:52	1
Toluene	0.200	U	0.200		ug/L			08/24/20 17:52	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 17:52	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 17:52	1
Trichloroethene	**2.27**		0.200		ug/L			08/24/20 17:52	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/24/20 17:52	1
Vinyl acetate	0.500	U	0.500		ug/L			08/24/20 17:52	1
Vinyl chloride	0.200	U	0.200		ug/L			08/24/20 17:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*08/24/20 17:52*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*08/24/20 17:52*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*08/24/20 17:52*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*08/24/20 17:52*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:06	08/15/20 19:20	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:06	08/15/20 19:20	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:06	08/15/20 19:20	1
Methane (1C)	**131**		5.00		ug/L		08/15/20 10:06	08/15/20 19:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*64*		*28 - 140*	*08/15/20 10:06*	*08/15/20 19:20*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**0.792**		0.500		mg/L			08/15/20 00:37	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**7.39**		5.00		mg/L			08/15/20 00:37	5

Client Sample ID: BOP-83i-0820
Lab Sample ID: 410-10702-6
Date Collected: 08/13/20 10:07
Matrix: Water
Date Received: 08/14/20 11:10

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	8.41		0.200		mg/L		08/15/20 11:10	08/20/20 21:06	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	1.71		0.206		mg/L		08/15/20 14:12	08/17/20 23:06	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.49		1.00		mg/L			08/19/20 19:09	1

Client Sample ID: Trip blanks
Lab Sample ID: 410-10702-7
Date Collected: 08/13/20 00:00
Matrix: Water
Date Received: 08/14/20 11:10

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			08/24/20 12:55	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/24/20 12:55	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/24/20 12:55	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/24/20 12:55	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 12:55	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/24/20 12:55	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/24/20 12:55	1
2-Butanone	5.00	U	5.00		ug/L			08/24/20 12:55	1
2-Hexanone	5.00	U	5.00		ug/L			08/24/20 12:55	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/24/20 12:55	1
Acetone	5.00	U	5.00		ug/L			08/24/20 12:55	1
Benzene	0.200	U	0.200		ug/L			08/24/20 12:55	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/24/20 12:55	1
Bromoform	1.00	U	1.00		ug/L			08/24/20 12:55	1
Bromomethane	0.500	U	0.500		ug/L			08/24/20 12:55	1
Carbon disulfide	0.500	U	0.500		ug/L			08/24/20 12:55	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/24/20 12:55	1
Chlorobenzene	0.500	U	0.500		ug/L			08/24/20 12:55	1
Chloroethane	0.500	U	0.500		ug/L			08/24/20 12:55	1
Chloroform	0.200	U	0.200		ug/L			08/24/20 12:55	1
Chloromethane	0.500	U	0.500		ug/L			08/24/20 12:55	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 12:55	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 12:55	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/24/20 12:55	1
Ethylbenzene	0.500	U	0.500		ug/L			08/24/20 12:55	1
Freon 113	0.500	U	0.500		ug/L			08/24/20 12:55	1
m&p-Xylene	0.500	U	0.500		ug/L			08/24/20 12:55	1
Methylene Chloride	0.500	U	0.500		ug/L			08/24/20 12:55	1
o-Xylene	0.500	U	0.500		ug/L			08/24/20 12:55	1
Styrene	0.500	U	0.500		ug/L			08/24/20 12:55	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/24/20 12:55	1
Toluene	0.200	U	0.200		ug/L			08/24/20 12:55	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 12:55	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 12:55	1

Client: Landau & Associates, Inc.
Job ID: 410-10702-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: Trip blanks
Lab Sample ID: 410-10702-7
Date Collected: 08/13/20 00:00
Matrix: Water
Date Received: 08/14/20 11:10

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	0.200	U	0.200		ug/L			08/24/20 12:55	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/24/20 12:55	1
Vinyl acetate	0.500	U	0.500		ug/L			08/24/20 12:55	1
Vinyl chloride	0.200	U	0.200		ug/L			08/24/20 12:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*08/24/20 12:55*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*08/24/20 12:55*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*08/24/20 12:55*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*08/24/20 12:55*	*1*

Surrogate Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10702-1

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)
410-10702-1	BOP-72i-0820	100	102	105	103
410-10702-2	BOP-75i-0820	101	101	106	103
410-10702-2 - DL	BOP-75i-0820	104	105	102	110
410-10702-3	BOP-80i-0820	101	102	104	102
410-10702-3 - DL	BOP-80i-0820	104	106	109	114
410-10702-4	BOP-81i-0820	99	102	104	103
410-10702-5	BOP-82i-0820	103	101	105	101
410-10702-6	BOP-83i-0820	101	101	104	102
410-10702-7	Trip blanks	103	101	105	101
LCS 410-36419/5	Lab Control Sample	101	103	104	102
LCS 410-36419/7	Lab Control Sample	103	103	104	99
LCS 410-37329/5	Lab Control Sample	98	100	110	106
LCS 410-37329/7	Lab Control Sample	100	104	102	112
LCSD 410-36419/6	Lab Control Sample Dup	98	102	106	103
LCSD 410-36419/8	Lab Control Sample Dup	100	102	104	100
LCSD 410-37329/6	Lab Control Sample Dup	102	104	125 X	109
LCSD 410-37329/8	Lab Control Sample Dup	97	102	98	99
MB 410-36419/10	Method Blank	102	102	105	102
MB 410-37329/10	Method Blank	102	102	112	89

Surrogate Legend

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

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		Propene1
Lab Sample ID	Client Sample ID	(28-140)
410-10702-1	BOP-72i-0820	66
410-10702-1 - DL	BOP-72i-0820	72
410-10702-2	BOP-75i-0820	77
410-10702-2 - DL	BOP-75i-0820	70
410-10702-3	BOP-80i-0820	91
410-10702-3 - DL	BOP-80i-0820	72
410-10702-4	BOP-81i-0820	66
410-10702-4 - DL	BOP-81i-0820	72
410-10702-5	BOP-82i-0820	72
410-10702-5 - DL	BOP-82i-0820	64
410-10702-6	BOP-83i-0820	64
LCS 410-33541/2-A	Lab Control Sample	97
LCS 410-33543/2-A	Lab Control Sample	96
LCS 410-33896/2-A	Lab Control Sample	93
LCSD 410-33541/3-A	Lab Control Sample Dup	96
LCSD 410-33896/3-A	Lab Control Sample Dup	91
MB 410-33541/1-A	Method Blank	91
MB 410-33543/1-A	Method Blank	99

Surrogate Summary

Client: Landau & Associates, Inc.
Job ID: 410-10702-1
Project/Site: Boeing of Portland/0025116.120.412

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Propene1 (28-140)								
MB 410-33896/1-A	Method Blank	94								

Surrogate Legend

Propene = Propene

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10702-1

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

Lab Sample ID: MB 410-36419/10
Matrix: Water
Analysis Batch: 36419

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			08/24/20 12:13	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/24/20 12:13	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/24/20 12:13	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/24/20 12:13	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 12:13	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/24/20 12:13	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/24/20 12:13	1
2-Butanone	5.00	U	5.00		ug/L			08/24/20 12:13	1
2-Hexanone	5.00	U	5.00		ug/L			08/24/20 12:13	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/24/20 12:13	1
Acetone	5.00	U	5.00		ug/L			08/24/20 12:13	1
Benzene	0.200	U	0.200		ug/L			08/24/20 12:13	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/24/20 12:13	1
Bromoform	1.00	U	1.00		ug/L			08/24/20 12:13	1
Bromomethane	0.500	U	0.500		ug/L			08/24/20 12:13	1
Carbon disulfide	0.500	U	0.500		ug/L			08/24/20 12:13	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/24/20 12:13	1
Chlorobenzene	0.500	U	0.500		ug/L			08/24/20 12:13	1
Chloroethane	0.500	U	0.500		ug/L			08/24/20 12:13	1
Chloroform	0.200	U	0.200		ug/L			08/24/20 12:13	1
Chloromethane	0.500	U	0.500		ug/L			08/24/20 12:13	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 12:13	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 12:13	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/24/20 12:13	1
Ethylbenzene	0.500	U	0.500		ug/L			08/24/20 12:13	1
Freon 113	0.500	U	0.500		ug/L			08/24/20 12:13	1
m&p-Xylene	0.500	U	0.500		ug/L			08/24/20 12:13	1
Methylene Chloride	0.500	U	0.500		ug/L			08/24/20 12:13	1
o-Xylene	0.500	U	0.500		ug/L			08/24/20 12:13	1
Styrene	0.500	U	0.500		ug/L			08/24/20 12:13	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/24/20 12:13	1
Toluene	0.200	U	0.200		ug/L			08/24/20 12:13	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 12:13	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 12:13	1
Trichloroethene	0.200	U	0.200		ug/L			08/24/20 12:13	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/24/20 12:13	1
Vinyl acetate	0.500	U	0.500		ug/L			08/24/20 12:13	1
Vinyl chloride	0.200	U	0.200		ug/L			08/24/20 12:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/24/20 12:13*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/24/20 12:13*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*08/24/20 12:13*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*08/24/20 12:13*	*1*

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

Lab Sample ID: LCS 410-36419/5
Matrix: Water
Analysis Batch: 36419

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	4.963		ug/L		99	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.244		ug/L		105	75 - 123
1,1,2-Trichloroethane	5.00	5.198		ug/L		104	80 - 120
1,1-Dichloroethane	5.00	5.482		ug/L		110	74 - 120
1,1-Dichloroethene	5.00	5.048		ug/L		101	80 - 131
1,2-Dichloroethane	5.00	5.307		ug/L		106	69 - 122
1,2-Dichloropropane	5.00	5.589		ug/L		112	80 - 120
2-Butanone	37.5	38.31		ug/L		102	59 - 141
2-Hexanone	25.0	27.32		ug/L		109	52 - 140
4-Methyl-2-pentanone	25.0	26.41		ug/L		106	55 - 140
Acetone	37.5	37.15		ug/L		99	60 - 146
Benzene	5.00	5.335		ug/L		107	80 - 120
Bromodichloromethane	5.00	4.997		ug/L		100	73 - 124
Bromoform	5.00	4.312		ug/L		86	49 - 144
Bromomethane	5.00	4.079		ug/L		82	60 - 136
Carbon disulfide	5.00	4.035		ug/L		81	67 - 130
Carbon tetrachloride	5.00	4.915		ug/L		98	64 - 141
Chlorobenzene	5.00	5.159		ug/L		103	80 - 120
Chloroethane	5.00	4.253		ug/L		85	63 - 120
Chloroform	5.00	5.349		ug/L		107	80 - 120
Chloromethane	5.00	4.343		ug/L		87	56 - 124
cis-1,2-Dichloroethene	5.00	5.508		ug/L		110	80 - 122
cis-1,3-Dichloropropene	5.00	5.379		ug/L		108	67 - 121
Dibromochloromethane	5.00	4.705		ug/L		94	64 - 138
Ethylbenzene	5.00	5.236		ug/L		105	80 - 120
Freon 113	5.00	4.358		ug/L		87	75 - 133
m&p-Xylene	10.0	10.63		ug/L		106	80 - 120
Methylene Chloride	5.00	5.207		ug/L		104	80 - 120
o-Xylene	5.00	4.967		ug/L		99	80 - 120
Styrene	5.00	5.289		ug/L		106	80 - 120
Tetrachloroethene	5.00	5.162		ug/L		103	80 - 120
Toluene	5.00	5.169		ug/L		103	80 - 120
trans-1,2-Dichloroethene	5.00	5.113		ug/L		102	80 - 122
trans-1,3-Dichloropropene	5.00	4.862		ug/L		97	61 - 129
Trichloroethene	5.00	5.239		ug/L		105	80 - 120
Trichlorofluoromethane	5.00	4.497		ug/L		90	62 - 136
Vinyl chloride	5.00	4.124		ug/L		82	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

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

Lab Sample ID: LCS 410-36419/7
Matrix: Water
Analysis Batch: 36419

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	13.81		ug/L		110	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 410-36419/6
Matrix: Water
Analysis Batch: 36419

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	5.017		ug/L		100	78 - 126	1	30
1,1,2,2-Tetrachloroethane			5.00	5.189		ug/L		104	75 - 123	1	30
1,1,2-Trichloroethane			5.00	5.234		ug/L		105	80 - 120	1	30
1,1-Dichloroethane			5.00	5.462		ug/L		109	74 - 120	0	30
1,1-Dichloroethene			5.00	4.992		ug/L		100	80 - 131	1	30
1,2-Dichloroethane			5.00	5.257		ug/L		105	69 - 122	1	30
1,2-Dichloropropane			5.00	5.655		ug/L		113	80 - 120	1	30
2-Butanone			37.5	37.85		ug/L		101	59 - 141	1	30
2-Hexanone			25.0	26.92		ug/L		108	52 - 140	1	30
4-Methyl-2-pentanone			25.0	25.88		ug/L		104	55 - 140	2	30
Acetone			37.5	36.68		ug/L		98	60 - 146	1	30
Benzene			5.00	5.327		ug/L		107	80 - 120	0	30
Bromodichloromethane			5.00	5.148		ug/L		103	73 - 124	3	30
Bromoform			5.00	4.226		ug/L		85	49 - 144	2	30
Bromomethane			5.00	4.102		ug/L		82	60 - 136	1	30
Carbon disulfide			5.00	4.029		ug/L		81	67 - 130	0	30
Carbon tetrachloride			5.00	4.867		ug/L		97	64 - 141	1	30
Chlorobenzene			5.00	5.279		ug/L		106	80 - 120	2	30
Chloroethane			5.00	4.340		ug/L		87	63 - 120	2	30
Chloroform			5.00	5.378		ug/L		108	80 - 120	1	30
Chloromethane			5.00	4.407		ug/L		88	56 - 124	1	30
cis-1,2-Dichloroethene			5.00	5.456		ug/L		109	80 - 122	1	30
cis-1,3-Dichloropropene			5.00	5.351		ug/L		107	67 - 121	1	30
Dibromochloromethane			5.00	4.702		ug/L		94	64 - 138	0	30
Ethylbenzene			5.00	5.273		ug/L		105	80 - 120	1	30
Freon 113			5.00	4.369		ug/L		87	75 - 133	0	30
m&p-Xylene			10.0	10.35		ug/L		103	80 - 120	3	30
Methylene Chloride			5.00	5.267		ug/L		105	80 - 120	1	30
o-Xylene			5.00	5.158		ug/L		103	80 - 120	4	30
Styrene			5.00	5.367		ug/L		107	80 - 120	1	30
Tetrachloroethene			5.00	5.170		ug/L		103	80 - 120	0	30
Toluene			5.00	5.216		ug/L		104	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	5.066		ug/L		101	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	4.900		ug/L		98	61 - 129	1	30
Trichloroethene			5.00	5.291		ug/L		106	80 - 120	1	30

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

Lab Sample ID: LCSD 410-36419/6
Matrix: Water
Analysis Batch: 36419

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	4.507		ug/L		90	62 - 136	0	30
Vinyl chloride			5.00	4.209		ug/L		84	60 - 125	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 410-36419/8
Matrix: Water
Analysis Batch: 36419

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	13.59		ug/L		109	38 - 145	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: MB 410-37329/10
Matrix: Water
Analysis Batch: 37329

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	<0.50		0.50	0.060	ug/L			08/26/20 11:06	1
1,1,2,2-Tetrachloroethane	<0.20		0.20	0.070	ug/L			08/26/20 11:06	1
1,1,2-Trichloroethane	<0.20		0.20	0.060	ug/L			08/26/20 11:06	1
1,1-Dichloroethane	<0.50		0.50	0.070	ug/L			08/26/20 11:06	1
1,1-Dichloroethene	<0.20		0.20	0.060	ug/L			08/26/20 11:06	1
1,2-Dichloroethane	<0.20		0.20	0.050	ug/L			08/26/20 11:06	1
1,2-Dichloropropane	<0.50		0.50	0.060	ug/L			08/26/20 11:06	1
2-Butanone	<5.0		5.0	0.60	ug/L			08/26/20 11:06	1
2-Hexanone	<5.0		5.0	0.60	ug/L			08/26/20 11:06	1
4-Methyl-2-pentanone	<5.0		5.0	0.70	ug/L			08/26/20 11:06	1
Acetone	<5.0		5.0	0.90	ug/L			08/26/20 11:06	1
Benzene	<0.20		0.20	0.050	ug/L			08/26/20 11:06	1
Bromodichloromethane	<0.50		0.50	0.050	ug/L			08/26/20 11:06	1
Bromoform	<1.0		1.0	0.30	ug/L			08/26/20 11:06	1
Bromomethane	<0.50		0.50	0.070	ug/L			08/26/20 11:06	1
Carbon disulfide	<0.50		0.50	0.060	ug/L			08/26/20 11:06	1
Carbon tetrachloride	<0.20		0.20	0.070	ug/L			08/26/20 11:06	1
Chlorobenzene	<0.50		0.50	0.060	ug/L			08/26/20 11:06	1
Chloroethane	<0.50		0.50	0.070	ug/L			08/26/20 11:06	1
Chloroform	<0.20		0.20	0.090	ug/L			08/26/20 11:06	1
Chloromethane	<0.50		0.50	0.060	ug/L			08/26/20 11:06	1

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

Lab Sample ID: MB 410-37329/10
Matrix: Water
Analysis Batch: 37329

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	<0.20		0.20	0.050	ug/L			08/26/20 11:06	1
cis-1,3-Dichloropropene	<0.20		0.20	0.050	ug/L			08/26/20 11:06	1
Dibromochloromethane	<0.50		0.50	0.070	ug/L			08/26/20 11:06	1
Ethylbenzene	<0.50		0.50	0.060	ug/L			08/26/20 11:06	1
Freon 113	<0.50		0.50	0.060	ug/L			08/26/20 11:06	1
m&p-Xylene	<0.50		0.50	0.10	ug/L			08/26/20 11:06	1
Methylene Chloride	<0.50		0.50	0.070	ug/L			08/26/20 11:06	1
o-Xylene	<0.50		0.50	0.050	ug/L			08/26/20 11:06	1
Styrene	<0.50		0.50	0.050	ug/L			08/26/20 11:06	1
Tetrachloroethene	<0.20		0.20	0.060	ug/L			08/26/20 11:06	1
Toluene	<0.20		0.20	0.070	ug/L			08/26/20 11:06	1
trans-1,2-Dichloroethene	<0.20		0.20	0.060	ug/L			08/26/20 11:06	1
trans-1,3-Dichloropropene	<0.20		0.20	0.060	ug/L			08/26/20 11:06	1
Trichloroethene	<0.20		0.20	0.060	ug/L			08/26/20 11:06	1
Trichlorofluoromethane	<0.50		0.50	0.050	ug/L			08/26/20 11:06	1
Vinyl acetate	<0.50		0.50	0.040	ug/L			08/26/20 11:06	1
Vinyl chloride	<0.20		0.20	0.10	ug/L			08/26/20 11:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/26/20 11:06*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/26/20 11:06*	*1*
4-Bromofluorobenzene (Surr)	*112*		*80 - 120*		*08/26/20 11:06*	*1*
Toluene-d8 (Surr)	*89*		*80 - 120*		*08/26/20 11:06*	*1*

Lab Sample ID: LCS 410-37329/5
Matrix: Water
Analysis Batch: 37329

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	5.05		ug/L		101	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.45		ug/L		109	75 - 123
1,1,2-Trichloroethane	5.00	5.37		ug/L		107	80 - 120
1,1-Dichloroethane	5.00	5.46		ug/L		109	74 - 120
1,1-Dichloroethene	5.00	5.10		ug/L		102	80 - 131
1,2-Dichloroethane	5.00	5.26		ug/L		105	69 - 122
1,2-Dichloropropane	5.00	5.65		ug/L		113	80 - 120
2-Butanone	37.5	35.5		ug/L		95	59 - 141
2-Hexanone	25.0	24.7		ug/L		99	52 - 140
4-Methyl-2-pentanone	25.0	23.1		ug/L		92	55 - 140
Acetone	37.5	35.9		ug/L		96	60 - 146
Benzene	5.00	5.33		ug/L		107	80 - 120
Bromodichloromethane	5.00	5.00		ug/L		100	73 - 124
Bromoform	5.00	4.68		ug/L		94	49 - 144
Bromomethane	5.00	3.97		ug/L		79	60 - 136
Carbon disulfide	5.00	4.51		ug/L		90	67 - 130
Carbon tetrachloride	5.00	5.07		ug/L		101	64 - 141
Chlorobenzene	5.00	5.20		ug/L		104	80 - 120
Chloroethane	5.00	4.11		ug/L		82	63 - 120

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

Lab Sample ID: LCS 410-37329/5
Matrix: Water
Analysis Batch: 37329

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	5.06		ug/L		101	80 - 120
Chloromethane	5.00	4.15		ug/L		83	56 - 124
cis-1,2-Dichloroethene	5.00	5.36		ug/L		107	80 - 122
cis-1,3-Dichloropropene	5.00	5.16		ug/L		103	67 - 121
Dibromochloromethane	5.00	5.00		ug/L		100	64 - 138
Ethylbenzene	5.00	5.30		ug/L		106	80 - 120
Freon 113	5.00	4.42		ug/L		88	75 - 133
m&p-Xylene	10.0	10.5		ug/L		105	80 - 120
Methylene Chloride	5.00	5.20		ug/L		104	80 - 120
o-Xylene	5.00	5.38		ug/L		108	80 - 120
Styrene	5.00	5.56		ug/L		111	80 - 120
Tetrachloroethene	5.00	5.40		ug/L		108	80 - 120
Toluene	5.00	5.42		ug/L		108	80 - 120
trans-1,2-Dichloroethene	5.00	4.98		ug/L		100	80 - 122
trans-1,3-Dichloropropene	5.00	5.01		ug/L		100	61 - 129
Trichloroethene	5.00	5.31		ug/L		106	80 - 120
Trichlorofluoromethane	5.00	4.57		ug/L		91	62 - 136
Vinyl chloride	5.00	3.98		ug/L		80	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*110*		*80 - 120*
Toluene-d8 (Surr)	*106*		*80 - 120*

Lab Sample ID: LCS 410-37329/7
Matrix: Water
Analysis Batch: 37329

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	13.5		ug/L		108	38 - 145

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Lab Sample ID: LCSD 410-37329/6
Matrix: Water
Analysis Batch: 37329

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	4.75		ug/L		95	78 - 126	6	30
1,1,2,2-Tetrachloroethane	5.00	5.56		ug/L		111	75 - 123	2	30
1,1,2-Trichloroethane	5.00	5.51		ug/L		110	80 - 120	3	30
1,1-Dichloroethane	5.00	5.23		ug/L		105	74 - 120	4	30
1,1-Dichloroethene	5.00	4.82		ug/L		96	80 - 131	6	30

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

Lab Sample ID: LCSD 410-37329/6
Matrix: Water
Analysis Batch: 37329

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	5.15		ug/L		103	69 - 122	2	30
1,2-Dichloropropane			5.00	5.34		ug/L		107	80 - 120	6	30
2-Butanone			37.5	34.9		ug/L		93	59 - 141	2	30
2-Hexanone			25.0	21.0		ug/L		84	52 - 140	16	30
4-Methyl-2-pentanone			25.0	21.0		ug/L		84	55 - 140	9	30
Acetone			37.5	36.5		ug/L		97	60 - 146	2	30
Benzene			5.00	5.11		ug/L		102	80 - 120	4	30
Bromodichloromethane			5.00	4.73		ug/L		95	73 - 124	6	30
Bromoform			5.00	5.23		ug/L		105	49 - 144	11	30
Bromomethane			5.00	3.68		ug/L		74	60 - 136	8	30
Carbon disulfide			5.00	4.20		ug/L		84	67 - 130	7	30
Carbon tetrachloride			5.00	4.71		ug/L		94	64 - 141	8	30
Chlorobenzene			5.00	5.09		ug/L		102	80 - 120	2	30
Chloroethane			5.00	3.68		ug/L		74	63 - 120	11	30
Chloroform			5.00	5.05		ug/L		101	80 - 120	0	30
Chloromethane			5.00	3.82		ug/L		76	56 - 124	8	30
cis-1,2-Dichloroethene			5.00	5.29		ug/L		106	80 - 122	1	30
cis-1,3-Dichloropropene			5.00	4.92		ug/L		98	67 - 121	5	30
Dibromochloromethane			5.00	5.10		ug/L		102	64 - 138	2	30
Ethylbenzene			5.00	5.29		ug/L		106	80 - 120	0	30
Freon 113			5.00	4.16		ug/L		83	75 - 133	6	30
m&p-Xylene			10.0	11.2		ug/L		112	80 - 120	7	30
Methylene Chloride			5.00	5.01		ug/L		100	80 - 120	4	30
o-Xylene			5.00	5.74		ug/L		115	80 - 120	6	30
Styrene			5.00	5.88		ug/L		118	80 - 120	6	30
Tetrachloroethene			5.00	5.31		ug/L		106	80 - 120	2	30
Toluene			5.00	5.38		ug/L		108	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	4.82		ug/L		96	80 - 122	3	30
trans-1,3-Dichloropropene			5.00	4.93		ug/L		99	61 - 129	2	30
Trichloroethene			5.00	5.01		ug/L		100	80 - 120	6	30
Trichlorofluoromethane			5.00	4.12		ug/L		82	62 - 136	10	30
Vinyl chloride			5.00	3.63		ug/L		73	60 - 125	9	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*125*	*X*	*80 - 120*
Toluene-d8 (Surr)	*109*		*80 - 120*

Lab Sample ID: LCSD 410-37329/8
Matrix: Water
Analysis Batch: 37329

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	13.3		ug/L		106	38 - 145	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*

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

Lab Sample ID: LCSD 410-37329/8
Matrix: Water
Analysis Batch: 37329

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

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Dibromofluoromethane (Surr)	102		80 - 120
4-Bromofluorobenzene (Surr)	98		80 - 120
Toluene-d8 (Surr)	99		80 - 120

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-33541/1-A
Matrix: Water
Analysis Batch: 33556

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33541

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 11:07	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 11:07	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 11:07	1
Methane (1C)	5.00	U	5.00		ug/L		08/15/20 10:04	08/15/20 11:07	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	91		28 - 140	08/15/20 10:04	08/15/20 11:07	1

Lab Sample ID: LCS 410-33541/2-A
Matrix: Water
Analysis Batch: 33556

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33541

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acetylene (1C)			51.2	52.42		ug/L		102	57 - 146		
Ethane (1C)			59.4	54.96		ug/L		93	85 - 115		
Ethene (1C)			60.4	57.32		ug/L		95	83 - 115		
Methane (1C)			59.4	59.26		ug/L		100	85 - 115		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Propene (1C)	97		28 - 140

Lab Sample ID: LCSD 410-33541/3-A
Matrix: Water
Analysis Batch: 33556

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 33541

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetylene (1C)			51.2	51.55		ug/L		101	57 - 146	2	20
Ethane (1C)			59.4	54.71		ug/L		92	85 - 115	0	20
Ethene (1C)			60.4	56.45		ug/L		94	83 - 115	2	20
Methane (1C)			59.4	59.54		ug/L		100	85 - 115	0	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Propene (1C)	96		28 - 140

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 410-33543/1-A
Matrix: Water
Analysis Batch: 33556

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33543

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/15/20 10:06	08/15/20 17:13	1
Ethane (1C)	5.00	U	5.00		ug/L		08/15/20 10:06	08/15/20 17:13	1
Ethene (1C)	5.00	U	5.00		ug/L		08/15/20 10:06	08/15/20 17:13	1
Methane (1C)	5.00	U	5.00		ug/L		08/15/20 10:06	08/15/20 17:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*99*		*28 - 140*	*08/15/20 10:06*	*08/15/20 17:13*	*1*

Lab Sample ID: LCS 410-33543/2-A
Matrix: Water
Analysis Batch: 33556

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33543

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acetylene (1C)			51.2	57.67		ug/L		113	57 - 146		
Ethane (1C)			59.4	56.50		ug/L		95	85 - 115		
Ethene (1C)			60.4	58.69		ug/L		97	83 - 115		
Methane (1C)			59.4	59.80		ug/L		101	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*96*		*28 - 140*

Lab Sample ID: MB 410-33896/1-A
Matrix: Water
Analysis Batch: 33923

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33896

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	<5.0		5.0	1.0	ug/L		08/17/20 09:03	08/17/20 17:32	1
Ethane (1C)	<5.0		5.0	1.0	ug/L		08/17/20 09:03	08/17/20 17:32	1
Ethene (1C)	<5.0		5.0	1.0	ug/L		08/17/20 09:03	08/17/20 17:32	1
Methane (1C)	<5.0		5.0	3.0	ug/L		08/17/20 09:03	08/17/20 17:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*94*		*28 - 140*	*08/17/20 09:03*	*08/17/20 17:32*	*1*

Lab Sample ID: LCS 410-33896/2-A
Matrix: Water
Analysis Batch: 33923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33896

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acetylene (1C)			51.2	51.3		ug/L		100	57 - 146		
Ethane (1C)			59.4	55.5		ug/L		93	85 - 115		
Ethene (1C)			60.4	57.3		ug/L		95	83 - 115		
Methane (1C)			59.4	59.3		ug/L		100	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*93*		*28 - 140*

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 410-33896/3-A
Matrix: Water
Analysis Batch: 33923

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 33896

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetylene (1C)			51.2	50.5		ug/L		99	57 - 146	2	20
Ethane (1C)			59.4	55.0		ug/L		93	85 - 115	1	20
Ethene (1C)			60.4	56.6		ug/L		94	83 - 115	1	20
Methane (1C)			59.4	59.6		ug/L		100	85 - 115	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*91*		*28 - 140*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-39328/4
Matrix: Water
Analysis Batch: 39328

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U	0.100		mg/L			08/14/20 21:13	1

Lab Sample ID: LCS 410-39328/3
Matrix: Water
Analysis Batch: 39328

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.6909		mg/L		92	90 - 110		

Lab Sample ID: MB 410-43215/4
Matrix: Water
Analysis Batch: 43215

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U	0.100		mg/L			09/12/20 10:36	1

Lab Sample ID: LCS 410-43215/3
Matrix: Water
Analysis Batch: 43215

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.7731		mg/L		103	90 - 110		

Lab Sample ID: 410-10702-1 MS
Matrix: Water
Analysis Batch: 43215

Client Sample ID: BOP-72i-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate	0.100	U H F1	2.50	0.4664	F1	mg/L		19	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-39329/4
Matrix: Water
Analysis Batch: 39329

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			08/14/20 21:13	1

Lab Sample ID: LCS 410-39329/3
Matrix: Water
Analysis Batch: 39329

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.567		mg/L		101	90 - 110		

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 410-33615/1-A
Matrix: Water
Analysis Batch: 34354

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33615

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.206	U	0.206		mg/L		08/15/20 14:12	08/17/20 22:16	1

Lab Sample ID: LCS 410-33615/2-A
Matrix: Water
Analysis Batch: 34354

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33615

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			0.402	0.4771		mg/L		119	80 - 120		

Lab Sample ID: MB 410-34250/1-A
Matrix: Water
Analysis Batch: 37472

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 34250

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.206	U	0.206		mg/L		08/18/20 06:22	08/26/20 08:22	1

Lab Sample ID: LCS 410-34250/2-A
Matrix: Water
Analysis Batch: 37472

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 34250

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			0.402	0.4039		mg/L		100	80 - 120		

Lab Sample ID: MB 410-33570/1-A
Matrix: Water
Analysis Batch: 35380

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 33570

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.200	U	0.200		mg/L		08/15/20 11:06	08/20/20 09:22	1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-33570/2-A
Matrix: Water
Analysis Batch: 35380

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 33570

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			0.402	0.4125		mg/L		103	80 - 120		

Lab Sample ID: MB 410-33573/1-A
Matrix: Water
Analysis Batch: 35668

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 33573

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.200	U	0.200		mg/L		08/15/20 11:10	08/20/20 20:11	1

Lab Sample ID: LCS 410-33573/2-A
Matrix: Water
Analysis Batch: 35668

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 33573

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			0.402	0.4143		mg/L		103	80 - 120		

Lab Sample ID: MB 410-34216/1-A
Matrix: Water
Analysis Batch: 34967

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 34216

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.200	U	0.200		mg/L		08/18/20 03:05	08/19/20 12:08	1

Lab Sample ID: LCS 410-34216/2-A
Matrix: Water
Analysis Batch: 34967

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 34216

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			0.402	0.4313		mg/L		107	80 - 120		

Lab Sample ID: 410-10702-1 MS
Matrix: Water
Analysis Batch: 37472

Client Sample ID: BOP-72i-0820
Prep Type: Dissolved
Prep Batch: 34250

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron	224		0.402	222.5	4	mg/L		-427	75 - 125		

Lab Sample ID: 410-10702-1 MSD
Matrix: Water
Analysis Batch: 37472

Client Sample ID: BOP-72i-0820
Prep Type: Dissolved
Prep Batch: 34250

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	224		0.402	221.9	4	mg/L		-567	75 - 125	0	20

Lab Sample ID: 410-10702-1 DU
Matrix: Water
Analysis Batch: 37472

Client Sample ID: BOP-72i-0820
Prep Type: Dissolved
Prep Batch: 34250

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Iron	224			225.7		mg/L				0.7	20

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-35283/5
Matrix: Water
Analysis Batch: 35283

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			08/19/20 15:48	1

Lab Sample ID: LCS 410-35283/4
Matrix: Water
Analysis Batch: 35283

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	25.50		mg/L		102	91 - 113		

Lab Sample ID: 410-10702-6 MS
Matrix: Water
Analysis Batch: 35283

Client Sample ID: BOP-83i-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	1.49		10.0	10.66		mg/L		92	91 - 113		

Lab Sample ID: 410-10702-6 DU
Matrix: Water
Analysis Batch: 35283

Client Sample ID: BOP-83i-0820
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	1.49			1.00	U	mg/L				NC	3

Lab Sample ID: MB 410-35808/5
Matrix: Water
Analysis Batch: 35808

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			08/20/20 15:07	1

Lab Sample ID: LCS 410-35808/4
Matrix: Water
Analysis Batch: 35808

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	25.15		mg/L		101	91 - 113		

GC/MS VOA

Analysis Batch: 36419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-1	BOP-72i-0820	Total/NA	Water	8260C LL	
410-10702-2	BOP-75i-0820	Total/NA	Water	8260C LL	
410-10702-3	BOP-80i-0820	Total/NA	Water	8260C LL	
410-10702-4	BOP-81i-0820	Total/NA	Water	8260C LL	
410-10702-5	BOP-82i-0820	Total/NA	Water	8260C LL	
410-10702-6	BOP-83i-0820	Total/NA	Water	8260C LL	
410-10702-7	Trip blanks	Total/NA	Water	8260C LL	
MB 410-36419/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-36419/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-36419/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-36419/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-36419/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Analysis Batch: 37329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-2 - DL	BOP-75i-0820	Total/NA	Water	8260C LL	
410-10702-3 - DL	BOP-80i-0820	Total/NA	Water	8260C LL	
MB 410-37329/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-37329/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-37329/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-37329/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-37329/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

GC VOA

Prep Batch: 33541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-1	BOP-72i-0820	Total/NA	Water	RSK-175	
410-10702-2	BOP-75i-0820	Total/NA	Water	RSK-175	
410-10702-3	BOP-80i-0820	Total/NA	Water	RSK-175	
MB 410-33541/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-33541/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-33541/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Prep Batch: 33543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-4	BOP-81i-0820	Total/NA	Water	RSK-175	
410-10702-5	BOP-82i-0820	Total/NA	Water	RSK-175	
410-10702-6	BOP-83i-0820	Total/NA	Water	RSK-175	
MB 410-33543/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-33543/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 33556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-1	BOP-72i-0820	Total/NA	Water	RSK-175	33541
410-10702-2	BOP-75i-0820	Total/NA	Water	RSK-175	33541
410-10702-3	BOP-80i-0820	Total/NA	Water	RSK-175	33541
410-10702-4	BOP-81i-0820	Total/NA	Water	RSK-175	33543
410-10702-5	BOP-82i-0820	Total/NA	Water	RSK-175	33543
410-10702-6	BOP-83i-0820	Total/NA	Water	RSK-175	33543
MB 410-33541/1-A	Method Blank	Total/NA	Water	RSK-175	33541

GC VOA (Continued)

Analysis Batch: 33556 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-33543/1-A	Method Blank	Total/NA	Water	RSK-175	33543
LCS 410-33541/2-A	Lab Control Sample	Total/NA	Water	RSK-175	33541
LCS 410-33543/2-A	Lab Control Sample	Total/NA	Water	RSK-175	33543
LCSD 410-33541/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	33541

Prep Batch: 33896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-1 - DL	BOP-72i-0820	Total/NA	Water	RSK-175	
410-10702-2 - DL	BOP-75i-0820	Total/NA	Water	RSK-175	
410-10702-3 - DL	BOP-80i-0820	Total/NA	Water	RSK-175	
410-10702-4 - DL	BOP-81i-0820	Total/NA	Water	RSK-175	
410-10702-5 - DL	BOP-82i-0820	Total/NA	Water	RSK-175	
MB 410-33896/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-33896/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-33896/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 33923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-1 - DL	BOP-72i-0820	Total/NA	Water	RSK-175	33896
410-10702-2 - DL	BOP-75i-0820	Total/NA	Water	RSK-175	33896
410-10702-3 - DL	BOP-80i-0820	Total/NA	Water	RSK-175	33896
410-10702-4 - DL	BOP-81i-0820	Total/NA	Water	RSK-175	33896
410-10702-5 - DL	BOP-82i-0820	Total/NA	Water	RSK-175	33896
MB 410-33896/1-A	Method Blank	Total/NA	Water	RSK-175	33896
LCS 410-33896/2-A	Lab Control Sample	Total/NA	Water	RSK-175	33896
LCSD 410-33896/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	33896

HPLC/IC

Analysis Batch: 39328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-1	BOP-72i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10702-2	BOP-75i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10702-3	BOP-80i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10702-4	BOP-81i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10702-5	BOP-82i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10702-6	BOP-83i-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-39328/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-39328/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 39329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-1	BOP-72i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10702-2	BOP-75i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10702-3	BOP-80i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10702-4	BOP-81i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10702-5	BOP-82i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10702-6	BOP-83i-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-39329/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-39329/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

HPLC/IC

Analysis Batch: 43215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-1	BOP-72i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10702-2	BOP-75i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10702-3	BOP-80i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10702-5	BOP-82i-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-43215/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-43215/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-10702-1 MS	BOP-72i-0820	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 33570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-1	BOP-72i-0820	Total Recoverable	Water	3005A	
410-10702-3	BOP-80i-0820	Total Recoverable	Water	3005A	
MB 410-33570/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-33570/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 33573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-4	BOP-81i-0820	Total Recoverable	Water	3005A	
410-10702-5	BOP-82i-0820	Total Recoverable	Water	3005A	
410-10702-6	BOP-83i-0820	Total Recoverable	Water	3005A	
MB 410-33573/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-33573/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 33615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-3	BOP-80i-0820	Dissolved	Water	Non-Digest Prep	
410-10702-4	BOP-81i-0820	Dissolved	Water	Non-Digest Prep	
410-10702-5	BOP-82i-0820	Dissolved	Water	Non-Digest Prep	
410-10702-6	BOP-83i-0820	Dissolved	Water	Non-Digest Prep	
MB 410-33615/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-33615/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Prep Batch: 34216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-2	BOP-75i-0820	Total Recoverable	Water	3005A	
MB 410-34216/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-34216/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 34250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-1	BOP-72i-0820	Dissolved	Water	Non-Digest Prep	
410-10702-2	BOP-75i-0820	Dissolved	Water	Non-Digest Prep	
MB 410-34250/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-34250/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	
410-10702-1 MS	BOP-72i-0820	Dissolved	Water	Non-Digest Prep	
410-10702-1 MSD	BOP-72i-0820	Dissolved	Water	Non-Digest Prep	
410-10702-1 DU	BOP-72i-0820	Dissolved	Water	Non-Digest Prep	

Metals

Analysis Batch: 34354

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-3	BOP-80i-0820	Dissolved	Water	6010D	33615
410-10702-4	BOP-81i-0820	Dissolved	Water	6010D	33615
410-10702-5	BOP-82i-0820	Dissolved	Water	6010D	33615
410-10702-6	BOP-83i-0820	Dissolved	Water	6010D	33615
MB 410-33615/1-A	Method Blank	Total/NA	Water	6010D	33615
LCS 410-33615/2-A	Lab Control Sample	Total/NA	Water	6010D	33615

Analysis Batch: 34967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-2	BOP-75i-0820	Total Recoverable	Water	6010D	34216
MB 410-34216/1-A	Method Blank	Total Recoverable	Water	6010D	34216
LCS 410-34216/2-A	Lab Control Sample	Total Recoverable	Water	6010D	34216

Analysis Batch: 35380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-1	BOP-72i-0820	Total Recoverable	Water	6010D	33570
410-10702-3	BOP-80i-0820	Total Recoverable	Water	6010D	33570
MB 410-33570/1-A	Method Blank	Total Recoverable	Water	6010D	33570
LCS 410-33570/2-A	Lab Control Sample	Total Recoverable	Water	6010D	33570

Analysis Batch: 35668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-4	BOP-81i-0820	Total Recoverable	Water	6010D	33573
410-10702-5	BOP-82i-0820	Total Recoverable	Water	6010D	33573
410-10702-6	BOP-83i-0820	Total Recoverable	Water	6010D	33573
MB 410-33573/1-A	Method Blank	Total Recoverable	Water	6010D	33573
LCS 410-33573/2-A	Lab Control Sample	Total Recoverable	Water	6010D	33573

Analysis Batch: 37472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-1	BOP-72i-0820	Dissolved	Water	6010D	34250
410-10702-2	BOP-75i-0820	Dissolved	Water	6010D	34250
MB 410-34250/1-A	Method Blank	Total/NA	Water	6010D	34250
LCS 410-34250/2-A	Lab Control Sample	Total/NA	Water	6010D	34250
410-10702-1 MS	BOP-72i-0820	Dissolved	Water	6010D	34250
410-10702-1 MSD	BOP-72i-0820	Dissolved	Water	6010D	34250
410-10702-1 DU	BOP-72i-0820	Dissolved	Water	6010D	34250

General Chemistry

Analysis Batch: 35283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-3	BOP-80i-0820	Total/NA	Water	5310C-2011	
410-10702-4	BOP-81i-0820	Total/NA	Water	5310C-2011	
410-10702-5	BOP-82i-0820	Total/NA	Water	5310C-2011	
410-10702-6	BOP-83i-0820	Total/NA	Water	5310C-2011	
MB 410-35283/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-35283/4	Lab Control Sample	Total/NA	Water	5310C-2011	
410-10702-6 MS	BOP-83i-0820	Total/NA	Water	5310C-2011	
410-10702-6 DU	BOP-83i-0820	Total/NA	Water	5310C-2011	

QC Association Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10702-1

General Chemistry

Analysis Batch: 35808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10702-1	BOP-72i-0820	Total/NA	Water	5310C-2011	
410-10702-2	BOP-75i-0820	Total/NA	Water	5310C-2011	
MB 410-35808/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-35808/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10702-1

Client Sample ID: BOP-72i-0820

Date Collected: 08/13/20 15:16
Date Received: 08/14/20 11:10

Lab Sample ID: 410-10702-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 16:06	K4WN	ELLE
Total/NA	Prep	RSK-175			33541	08/15/20 10:04	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	33556	08/15/20 16:01	IYN5	ELLE
Total/NA	Prep	RSK-175	DL		33896	08/17/20 09:03	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	100	33923	08/17/20 19:22	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	39328	08/15/20 01:29	IGI3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	39329	08/15/20 01:29	IGI3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43215	09/12/20 15:25	WHJ3	ELLE
Dissolved	Prep	Non-Digest Prep			34250	08/18/20 06:22	UJL8	ELLE
Dissolved	Analysis	6010D		1	37472	08/26/20 08:28	ULJC	ELLE
Total Recoverable	Prep	3005A			33570	08/15/20 11:06	UJLA	ELLE
Total Recoverable	Analysis	6010D		1	35380	08/20/20 10:54	ULJC	ELLE
Total/NA	Analysis	5310C-2011		100	35808	08/20/20 17:47	KGQ6	ELLE

Client Sample ID: BOP-75i-0820

Date Collected: 08/13/20 14:19
Date Received: 08/14/20 11:10

Lab Sample ID: 410-10702-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 16:27	K4WN	ELLE
Total/NA	Analysis	8260C LL	DL	20	37329	08/26/20 17:30	K4WN	ELLE
Total/NA	Prep	RSK-175			33541	08/15/20 10:04	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	33556	08/15/20 16:19	IYN5	ELLE
Total/NA	Prep	RSK-175	DL		33896	08/17/20 09:03	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	100	33923	08/17/20 19:40	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	39328	08/14/20 23:29	IGI3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	39329	08/14/20 23:29	IGI3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43215	09/12/20 14:49	WHJ3	ELLE
Dissolved	Prep	Non-Digest Prep			34250	08/18/20 06:22	UJL8	ELLE
Dissolved	Analysis	6010D		1	37472	08/26/20 08:48	ULJC	ELLE
Total Recoverable	Prep	3005A			34216	08/18/20 03:05	UJL8	ELLE
Total Recoverable	Analysis	6010D		1	34967	08/19/20 13:04	UCIG	ELLE
Total/NA	Analysis	5310C-2011		250	35808	08/20/20 18:00	KGQ6	ELLE

Client Sample ID: BOP-80i-0820

Date Collected: 08/13/20 13:20
Date Received: 08/14/20 11:10

Lab Sample ID: 410-10702-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 16:48	K4WN	ELLE
Total/NA	Analysis	8260C LL	DL	20	37329	08/26/20 17:51	K4WN	ELLE
Total/NA	Prep	RSK-175			33541	08/15/20 10:04	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	33556	08/15/20 16:37	IYN5	ELLE

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10702-1

Client Sample ID: BOP-80i-0820

Lab Sample ID: 410-10702-3

Date Collected: 08/13/20 13:20

Matrix: Water

Date Received: 08/14/20 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	RSK-175	DL		33896	08/17/20 09:03	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	20	33923	08/17/20 19:58	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	39328	08/15/20 00:54	IGI3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	39329	08/15/20 00:54	IGI3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43215	09/12/20 14:31	WHJ3	ELLE
Dissolved	Prep	Non-Digest Prep			33615	08/15/20 14:12	UJLA	ELLE
Dissolved	Analysis	6010D		1	34354	08/17/20 22:57	UEFS	ELLE
Total Recoverable	Prep	3005A			33570	08/15/20 11:06	UJLA	ELLE
Total Recoverable	Analysis	6010D		1	35380	08/20/20 10:57	ULJC	ELLE
Total/NA	Analysis	5310C-2011		1	35283	08/19/20 20:04	KGQ6	ELLE

Client Sample ID: BOP-81i-0820

Lab Sample ID: 410-10702-4

Date Collected: 08/13/20 12:25

Matrix: Water

Date Received: 08/14/20 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 17:09	K4WN	ELLE
Total/NA	Prep	RSK-175			33543	08/15/20 10:06	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	33556	08/15/20 18:44	IYN5	ELLE
Total/NA	Prep	RSK-175	DL		33896	08/17/20 09:03	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	100	33923	08/17/20 20:16	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	39328	08/14/20 23:12	IGI3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	39329	08/14/20 23:12	IGI3	ELLE
Dissolved	Prep	Non-Digest Prep			33615	08/15/20 14:12	UJLA	ELLE
Dissolved	Analysis	6010D		1	34354	08/17/20 23:00	UEFS	ELLE
Total Recoverable	Prep	3005A			33573	08/15/20 11:10	UJLA	ELLE
Total Recoverable	Analysis	6010D		1	35668	08/20/20 20:37	UCIG	ELLE
Total/NA	Analysis	5310C-2011		1	35283	08/19/20 20:17	KGQ6	ELLE

Client Sample ID: BOP-82i-0820

Lab Sample ID: 410-10702-5

Date Collected: 08/13/20 10:57

Matrix: Water

Date Received: 08/14/20 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 17:30	K4WN	ELLE
Total/NA	Prep	RSK-175			33543	08/15/20 10:06	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	33556	08/15/20 19:02	IYN5	ELLE
Total/NA	Prep	RSK-175	DL		33896	08/17/20 09:03	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	5	33923	08/17/20 20:53	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	39328	08/14/20 22:55	IGI3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	39329	08/14/20 22:55	IGI3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	43215	09/12/20 14:13	WHJ3	ELLE
Dissolved	Prep	Non-Digest Prep			33615	08/15/20 14:12	UJLA	ELLE
Dissolved	Analysis	6010D		1	34354	08/17/20 23:03	UEFS	ELLE

Lab Chronicle

Client: Landau & Associates, Inc.
Job ID: 410-10702-1
Project/Site: Boeing of Portland/0025116.120.412

Client Sample ID: BOP-82i-0820
Lab Sample ID: 410-10702-5
Date Collected: 08/13/20 10:57
Matrix: Water
Date Received: 08/14/20 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			33573	08/15/20 11:10	UJLA	ELLE
Total Recoverable	Analysis	6010D		1	35668	08/20/20 20:41	UCIG	ELLE
Total/NA	Analysis	5310C-2011		1	35283	08/19/20 20:58	KGQ6	ELLE

Client Sample ID: BOP-83i-0820
Lab Sample ID: 410-10702-6
Date Collected: 08/13/20 10:07
Matrix: Water
Date Received: 08/14/20 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 17:52	K4WN	ELLE
Total/NA	Prep	RSK-175			33543	08/15/20 10:06	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	33556	08/15/20 19:20	IYN5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	39328	08/15/20 00:37	IGI3	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	39329	08/15/20 00:37	IGI3	ELLE
Dissolved	Prep	Non-Digest Prep			33615	08/15/20 14:12	UJLA	ELLE
Dissolved	Analysis	6010D		1	34354	08/17/20 23:06	UEFS	ELLE
Total Recoverable	Prep	3005A			33573	08/15/20 11:10	UJLA	ELLE
Total Recoverable	Analysis	6010D		1	35668	08/20/20 21:06	UCIG	ELLE
Total/NA	Analysis	5310C-2011		1	35283	08/19/20 19:09	KGQ6	ELLE

Client Sample ID: Trip blanks
Lab Sample ID: 410-10702-7
Date Collected: 08/13/20 00:00
Matrix: Water
Date Received: 08/14/20 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 12:55	K4WN	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: 410-10702-1
Project/Site: Boeing of Portland/0025116.120.412

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/0025116.120.412

Job ID: 410-10702-1

Method	Method Description	Protocol	Laboratory
8260C LL	Volatile Organic Compounds by GC/MS	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010D	Metals (ICP)	SW846	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

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.
Project/Site: Boeing of Portland/0025116.120.412

Job ID: 410-10702-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-10702-1	BOP-72i-0820	Water	08/13/20 15:16	08/14/20 11:10	
410-10702-2	BOP-75i-0820	Water	08/13/20 14:19	08/14/20 11:10	
410-10702-3	BOP-80i-0820	Water	08/13/20 13:20	08/14/20 11:10	
410-10702-4	BOP-81i-0820	Water	08/13/20 12:25	08/14/20 11:10	
410-10702-5	BOP-82i-0820	Water	08/13/20 10:57	08/14/20 11:10	
410-10702-6	BOP-83i-0820	Water	08/13/20 10:07	08/14/20 11:10	
410-10702-7	Trip blanks	Water	08/13/20 00:00	08/14/20 11:10	

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-10702 Chain of Custody

ıental use only

ipond.

1 Client Information

Site Location: Gresham, Oregon
Site Project: 0025116.120.412
Site Program/#: Boeing of Portland
Boeing PM: Debbie Taege
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL # of Coolers: 1

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	4 VOC (38 list)	TOC	Sulfate	Nitrate	AMEE	Total Iron	Dissolved Iron	5 Remarks/Comments
BOP-72i-0820	8/13/20	15:16	H_2O	11	X	X	X	X	X	X	X	
BOP-75i-0820		14:19		11	X	X	X	X	X	X	X	
BOP-80i-0820		13:20		11	X	X	X	X	X	X	X	
BOP-81i-0820		1225		11	X	X	X	X	X	X	X	
BOP-82i-0820		1057		11	X	X	X	X	X	X	X	
BOP-83i-0820	↓	1007	↓	11	X	X	X	X	X	X	X	
Trip blanks	—	—	H_2O	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 7
W. Kay Lepp	8/13/20 14:25		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time 8/14/2020 1110

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

Temperature upon Receipt: -0.9 °C

Custody Seals Intact?: Yes No

TMR

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 410-10702-1

Login Number: 10702
List Number: 1
Creator: Rivera, Tatiana

List Source: Eurofins Lancaster Laboratories Env

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.	True	
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.	N/A	

eurofins | Environment Testing America



ANALYTICAL REPORT

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

Laboratory Job ID: 410-10882-1
Client Project/Site: Boeing Portland/00251116.120.412

For:
Landau & Associates, Inc.
Sound View Plaza, 130 2nd Ave S
Edmonds, Washington 98020-9129

Attn: Chris Kimmel

Authorized for release by:
9/4/2020 3:14:14 PM

Kay Hower, Principal Project Manager
(717)556-7364
kayhower@eurofinsus.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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 recoveries that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result.

* 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 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. 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 LANACASTER 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. 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.



Kay Hower
Principal Project Manager
9/4/2020 3:14:14 PM

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 6
Detection Summary 8
Client Sample Results 10
Surrogate Summary 19
QC Sample Results 20
QC Association Summary 35
Lab Chronicle 39
Certification Summary 41
Method Summary 43
Sample Summary 44
Chain of Custody 45
Receipt Checklists 46

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate recovery exceeds control limits

GC VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate recovery exceeds control limits

HPLC/IC

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

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

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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: 410-10882-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-10882-1

Receipt
The samples were received on 8/15/2020 9:54 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.1° C.

GC/MS VOA
Method 8260C LL: The continuing calibration verification (CCV) associated with batch 410-36866 recovered outside acceptance criteria, low biased, for Bromomethane and Vinyl chloride. 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.

Method 8260C LL: The method requirement for no headspace was not met. The following volatile sample was analyzed with significant headspace in the sample container(s): BOP-73i-0820 (410-10882-2). Significant headspace is defined as a bubble greater than 6 mm in diameter. The sample container was received with headspace.

Method 8260C LL: The method requirement for no headspace was not met. The container (s) used for reanalysis (further dilution) of the following sample contained significant headspace: BOP-76i-0820 (410-10882-3). Significant headspace is defined as a bubble greater than 6 mm in diameter. The sample container was received with headspace.

Method 8260C LL: The continuing calibration verification (CCV) associated with batch 410-37329 recovered outside acceptance criteria, low biased, for Bromomethane and Vinyl chloride. 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.

HPLC/IC
Method 300.0: The following sample was analyzed outside of analytical holding time for Nitrogen, Nitrate due to laboratory error: BOP-77i-0820 (410-10882-1), BOP-73i-0820 (410-10882-2) and BOP-76i-0820 (410-10882-3).

Method 300.0: The method blank contained Nitrogen, Nitrate above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

Method 300.0: The method blank for analytical batch 410-34311 contained Nitrogen, Nitrate above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

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

GC VOA
Method RSK-175: The continuing calibration verification (CCV) associated with batch 410-34044 recovered above the upper control limit for Acetylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: BOP-77i-0820 (410-10882-1), BOP-73i-0820 (410-10882-2) and BOP-76i-0820 (410-10882-3).

Method RSK-175: The following sample(s) were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was 5 when verified by the laboratory: BOP-76i-0820 (410-10882-3).

Method RSK-175: Surrogate recovery for the following sample was outside control limits: BOP-76i-0820 (410-10882-3). Re-extraction and/or re-analysis was performed and surrogate recovery was outside control limits. Results are reported from all trials.

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

Metals

Job ID: 410-10882-1 (Continued)

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Continued)

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

General Chemistry

Method SM 5310C: The reference method requires samples to be preserved to a pH of <2. The following sample(s) were received with insufficient preservation at a pH of 5: BOP-77i-0820 (410-10882-1) and BOP-76i-0820 (410-10882-3). The sample(s) were preserved to the appropriate pH in the laboratory.

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

VOA Prep

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

Detection Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland/00251116.120.412

Job ID: 410-10882-1

Client Sample ID: BOP-77i-0820 — Lab Sample ID: 410-10882-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	115		5.00		ug/L	1		8260C LL	Total/NA
2-Hexanone	41.8		5.00		ug/L	1		8260C LL	Total/NA
Acetone	26.4		5.00		ug/L	1		8260C LL	Total/NA
Benzene	0.685		0.200		ug/L	1		8260C LL	Total/NA
Carbon disulfide	0.711		0.500		ug/L	1		8260C LL	Total/NA
Chloroform	1.78		0.200		ug/L	1		8260C LL	Total/NA
Chloromethane	15.3		0.500		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	3.23		0.200		ug/L	1		8260C LL	Total/NA
Methylene Chloride	0.623		0.500		ug/L	1		8260C LL	Total/NA
Toluene	14.4		0.200		ug/L	1		8260C LL	Total/NA
trans-1,2-Dichloroethene	0.398		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	1.41		0.200		ug/L	1		8260C LL	Total/NA
Ethane (1C)	7.85		5.00		ug/L	1		RSK-175	Total/NA
Methane (1C)	9500	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	13400		250		ug/L	50		RSK-175	Total/NA
Nitrogen, Nitrate	90.3	H	5.00		mg/L	50		EPA 300.0 R2.1	Total/NA
Sulfate	69.6		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
Iron	374		1.00		mg/L	5		6010D	Total Recoverable
Iron	350		1.03		mg/L	5		6010D	Dissolved
Total Organic Carbon	13200		500		mg/L	500		5310C-2011	Total/NA

Client Sample ID: BOP-73i-0820 — Lab Sample ID: 410-10882-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	5.45		2.50		ug/L	5		8260C LL	Total/NA
cis-1,2-Dichloroethene	320	E	1.00		ug/L	5		8260C LL	Total/NA
Toluene	1.03		1.00		ug/L	5		8260C LL	Total/NA
trans-1,2-Dichloroethene	61.0		1.00		ug/L	5		8260C LL	Total/NA
Trichloroethene	1.17		1.00		ug/L	5		8260C LL	Total/NA
Vinyl chloride	482	E	1.00		ug/L	5		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	302		4.00		ug/L	20		8260C LL	Total/NA
trans-1,2-Dichloroethene - DL	57.0		4.00		ug/L	20		8260C LL	Total/NA
Vinyl chloride - DL	463		4.00		ug/L	20		8260C LL	Total/NA
Ethane (1C)	79.5		5.00		ug/L	1		RSK-175	Total/NA
Ethene (1C)	1870	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C)	9750	E	5.00		ug/L	1		RSK-175	Total/NA
Ethene (1C) - DL	3090		250		ug/L	50		RSK-175	Total/NA
Methane (1C) - DL	16600		250		ug/L	50		RSK-175	Total/NA
Iron	65.7		0.200		mg/L	1		6010D	Total Recoverable
Iron	62.9		0.206		mg/L	1		6010D	Dissolved
Total Organic Carbon	694		50.0		mg/L	50		5310C-2011	Total/NA

Client Sample ID: BOP-76i-0820 — Lab Sample ID: 410-10882-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	706	E	5.00		ug/L	1		8260C LL	Total/NA
2-Hexanone	54.7		5.00		ug/L	1		8260C LL	Total/NA
Acetone	30.5		5.00		ug/L	1		8260C LL	Total/NA
Benzene	1.19		0.200		ug/L	1		8260C LL	Total/NA
Chloroform	1.42		0.200		ug/L	1		8260C LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: BOP-76i-0820 (Continued)
Lab Sample ID: 410-10882-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Chloromethane	7.90		0.500		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	0.878		0.200		ug/L	1		8260C LL	Total/NA
Methylene Chloride	0.708		0.500		ug/L	1		8260C LL	Total/NA
Toluene	0.324		0.200		ug/L	1		8260C LL	Total/NA
trans-1,2-Dichloroethene	0.322		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	0.332		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	8.52		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone - DL	820		50.0		ug/L	10		8260C LL	Total/NA
Acetone - DL	56.4		50.0		ug/L	10		8260C LL	Total/NA
Chloromethane - DL	7.11		5.00		ug/L	10		8260C LL	Total/NA
Vinyl chloride - DL	7.29		2.00		ug/L	10		8260C LL	Total/NA
Ethane (1C)	28.1		5.00		ug/L	1		RSK-175	Total/NA
Ethene (1C)	74.3		5.00		ug/L	1		RSK-175	Total/NA
Methane (1C)	5360	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	9370		250		ug/L	50		RSK-175	Total/NA
Ethane (1C) - RA	27.6		5.00		ug/L	1		RSK-175	Total/NA
Ethene (1C) - RA	76.2		5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - RA	5320	E	5.00		ug/L	1		RSK-175	Total/NA
Nitrogen, Nitrate	12.3	H	0.500		mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	67.4		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
Iron	646		1.00		mg/L	5		6010D	Total Recoverable
Iron	657		1.03		mg/L	5		6010D	Dissolved
Total Organic Carbon	12700		500		mg/L	500		5310C-2011	Total/NA

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10882-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Landau & Associates, Inc.
Job ID: 410-10882-1
Project/Site: Boeing Portland/00251116.120.412

Client Sample ID: BOP-77i-0820
Lab Sample ID: 410-10882-1
Date Collected: 08/14/20 09:15
Matrix: Water
Date Received: 08/15/20 09:54

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			08/24/20 19:16	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/24/20 19:16	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/24/20 19:16	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/24/20 19:16	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 19:16	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/24/20 19:16	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/24/20 19:16	1
2-Butanone	**115**		5.00		ug/L			08/24/20 19:16	1
2-Hexanone	**41.8**		5.00		ug/L			08/24/20 19:16	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/24/20 19:16	1
Acetone	**26.4**		5.00		ug/L			08/24/20 19:16	1
Benzene	**0.685**		0.200		ug/L			08/24/20 19:16	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/24/20 19:16	1
Bromoform	1.00	U	1.00		ug/L			08/24/20 19:16	1
Bromomethane	0.500	U	0.500		ug/L			08/24/20 19:16	1
Carbon disulfide	**0.711**		0.500		ug/L			08/24/20 19:16	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/24/20 19:16	1
Chlorobenzene	0.500	U	0.500		ug/L			08/24/20 19:16	1
Chloroethane	0.500	U	0.500		ug/L			08/24/20 19:16	1
Chloroform	**1.78**		0.200		ug/L			08/24/20 19:16	1
Chloromethane	**15.3**		0.500		ug/L			08/24/20 19:16	1
cis-1,2-Dichloroethene	**3.23**		0.200		ug/L			08/24/20 19:16	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 19:16	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/24/20 19:16	1
Ethylbenzene	0.500	U	0.500		ug/L			08/24/20 19:16	1
Freon 113	0.500	U	0.500		ug/L			08/24/20 19:16	1
m&p-Xylene	0.500	U	0.500		ug/L			08/24/20 19:16	1
Methylene Chloride	**0.623**		0.500		ug/L			08/24/20 19:16	1
o-Xylene	0.500	U	0.500		ug/L			08/24/20 19:16	1
Styrene	0.500	U	0.500		ug/L			08/24/20 19:16	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/24/20 19:16	1
Toluene	**14.4**		0.200		ug/L			08/24/20 19:16	1
trans-1,2-Dichloroethene	**0.398**		0.200		ug/L			08/24/20 19:16	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 19:16	1
Trichloroethene	0.200	U	0.200		ug/L			08/24/20 19:16	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/24/20 19:16	1
Vinyl acetate	0.500	U	0.500		ug/L			08/24/20 19:16	1
Vinyl chloride	**1.41**		0.200		ug/L			08/24/20 19:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*08/24/20 19:16*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*08/24/20 19:16*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*08/24/20 19:16*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*08/24/20 19:16*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/17/20 09:28	08/17/20 20:10	1
Ethane (1C)	**7.85**		5.00		ug/L		08/17/20 09:28	08/17/20 20:10	1
Ethene (1C)	5.00	U	5.00		ug/L		08/17/20 09:28	08/17/20 20:10	1

Client Sample ID: BOP-77i-0820

Lab Sample ID: 410-10882-1

Date Collected: 08/14/20 09:15

Matrix: Water

Date Received: 08/15/20 09:54

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**9500**	**E**	5.00		ug/L		08/17/20 09:28	08/17/20 20:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*76*		*28 - 140*	*08/17/20 09:28*	*08/17/20 20:10*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	250	U	250		ug/L		08/18/20 08:32	08/18/20 11:48	50
Ethane (1C)	250	U	250		ug/L		08/18/20 08:32	08/18/20 11:48	50
Ethene (1C)	250	U	250		ug/L		08/18/20 08:32	08/18/20 11:48	50
Methane (1C)	**13400**		250		ug/L		08/18/20 08:32	08/18/20 11:48	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*84*		*28 - 140*	*08/18/20 08:32*	*08/18/20 11:48*	*50*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**90.3**	**H**	5.00		mg/L			08/18/20 12:42	50

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**69.6**		5.00		mg/L			08/18/20 12:25	5

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**374**		1.00		mg/L		08/19/20 03:42	08/27/20 19:26	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**350**		1.03		mg/L		09/01/20 05:34	09/01/20 18:39	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**13200**		500		mg/L			08/20/20 18:14	500

Client Sample ID: BOP-73i-0820

Lab Sample ID: 410-10882-2

Date Collected: 08/14/20 10:15

Matrix: Water

Date Received: 08/15/20 09:54

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	2.50	U	2.50		ug/L			08/26/20 19:37	5
1,1,2,2-Tetrachloroethane	1.00	U	1.00		ug/L			08/26/20 19:37	5
1,1,2-Trichloroethane	1.00	U	1.00		ug/L			08/26/20 19:37	5
1,1-Dichloroethane	**5.45**		2.50		ug/L			08/26/20 19:37	5
1,1-Dichloroethene	1.00	U	1.00		ug/L			08/26/20 19:37	5
1,2-Dichloroethane	1.00	U	1.00		ug/L			08/26/20 19:37	5
1,2-Dichloropropane	2.50	U	2.50		ug/L			08/26/20 19:37	5
2-Butanone	25.0	U	25.0		ug/L			08/26/20 19:37	5
2-Hexanone	25.0	U	25.0		ug/L			08/26/20 19:37	5
4-Methyl-2-pentanone	25.0	U	25.0		ug/L			08/26/20 19:37	5
Acetone	25.0	U	25.0		ug/L			08/26/20 19:37	5

Client: Landau & Associates, Inc.
Job ID: 410-10882-1
Project/Site: Boeing Portland/00251116.120.412

Client Sample ID: BOP-73i-0820
Lab Sample ID: 410-10882-2
Date Collected: 08/14/20 10:15
Matrix: Water
Date Received: 08/15/20 09:54

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.00	U	1.00		ug/L			08/26/20 19:37	5
Bromodichloromethane	2.50	U	2.50		ug/L			08/26/20 19:37	5
Bromoform	5.00	U	5.00		ug/L			08/26/20 19:37	5
Bromomethane	2.50	U	2.50		ug/L			08/26/20 19:37	5
Carbon disulfide	2.50	U	2.50		ug/L			08/26/20 19:37	5
Carbon tetrachloride	1.00	U	1.00		ug/L			08/26/20 19:37	5
Chlorobenzene	2.50	U	2.50		ug/L			08/26/20 19:37	5
Chloroethane	2.50	U	2.50		ug/L			08/26/20 19:37	5
Chloroform	1.00	U	1.00		ug/L			08/26/20 19:37	5
Chloromethane	2.50	U	2.50		ug/L			08/26/20 19:37	5
cis-1,2-Dichloroethene	**320**	**E**	1.00		ug/L			08/26/20 19:37	5
cis-1,3-Dichloropropene	1.00	U	1.00		ug/L			08/26/20 19:37	5
Dibromochloromethane	2.50	U	2.50		ug/L			08/26/20 19:37	5
Ethylbenzene	2.50	U	2.50		ug/L			08/26/20 19:37	5
Freon 113	2.50	U	2.50		ug/L			08/26/20 19:37	5
m&p-Xylene	2.50	U	2.50		ug/L			08/26/20 19:37	5
Methylene Chloride	2.50	U	2.50		ug/L			08/26/20 19:37	5
o-Xylene	2.50	U	2.50		ug/L			08/26/20 19:37	5
Styrene	2.50	U	2.50		ug/L			08/26/20 19:37	5
Tetrachloroethene	1.00	U	1.00		ug/L			08/26/20 19:37	5
Toluene	**1.03**		1.00		ug/L			08/26/20 19:37	5
trans-1,2-Dichloroethene	**61.0**		1.00		ug/L			08/26/20 19:37	5
trans-1,3-Dichloropropene	1.00	U	1.00		ug/L			08/26/20 19:37	5
Trichloroethene	**1.17**		1.00		ug/L			08/26/20 19:37	5
Trichlorofluoromethane	2.50	U	2.50		ug/L			08/26/20 19:37	5
Vinyl acetate	2.50	U	2.50		ug/L			08/26/20 19:37	5
Vinyl chloride	**482**	**E**	1.00		ug/L			08/26/20 19:37	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*		*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*			*08/26/20 19:37*	*5*
Dibromofluoromethane (Surr)	*106*		*80 - 120*			*08/26/20 19:37*	*5*
4-Bromofluorobenzene (Surr)	*118*		*80 - 120*			*08/26/20 19:37*	*5*
Toluene-d8 (Surr)	*109*		*80 - 120*			*08/26/20 19:37*	*5*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	10.0	U	10.0		ug/L			08/25/20 12:50	20
1,1,2,2-Tetrachloroethane	4.00	U	4.00		ug/L			08/25/20 12:50	20
1,1,2-Trichloroethane	4.00	U	4.00		ug/L			08/25/20 12:50	20
1,1-Dichloroethane	10.0	U	10.0		ug/L			08/25/20 12:50	20
1,1-Dichloroethene	4.00	U	4.00		ug/L			08/25/20 12:50	20
1,2-Dichloroethane	4.00	U	4.00		ug/L			08/25/20 12:50	20
1,2-Dichloropropane	10.0	U	10.0		ug/L			08/25/20 12:50	20
2-Butanone	100	U	100		ug/L			08/25/20 12:50	20
2-Hexanone	100	U	100		ug/L			08/25/20 12:50	20
4-Methyl-2-pentanone	100	U	100		ug/L			08/25/20 12:50	20
Acetone	100	U	100		ug/L			08/25/20 12:50	20
Benzene	4.00	U	4.00		ug/L			08/25/20 12:50	20
Bromodichloromethane	10.0	U	10.0		ug/L			08/25/20 12:50	20
Bromoform	20.0	U	20.0		ug/L			08/25/20 12:50	20

Client Sample ID: BOP-73i-0820
Lab Sample ID: 410-10882-2
Date Collected: 08/14/20 10:15
Matrix: Water
Date Received: 08/15/20 09:54

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	10.0	U	10.0		ug/L			08/25/20 12:50	20
Carbon disulfide	10.0	U	10.0		ug/L			08/25/20 12:50	20
Carbon tetrachloride	4.00	U	4.00		ug/L			08/25/20 12:50	20
Chlorobenzene	10.0	U	10.0		ug/L			08/25/20 12:50	20
Chloroethane	10.0	U	10.0		ug/L			08/25/20 12:50	20
Chloroform	4.00	U	4.00		ug/L			08/25/20 12:50	20
Chloromethane	10.0	U	10.0		ug/L			08/25/20 12:50	20
cis-1,2-Dichloroethene	**302**		4.00		ug/L			08/25/20 12:50	20
cis-1,3-Dichloropropene	4.00	U	4.00		ug/L			08/25/20 12:50	20
Dibromochloromethane	10.0	U	10.0		ug/L			08/25/20 12:50	20
Ethylbenzene	10.0	U	10.0		ug/L			08/25/20 12:50	20
Freon 113	10.0	U	10.0		ug/L			08/25/20 12:50	20
m&p-Xylene	10.0	U	10.0		ug/L			08/25/20 12:50	20
Methylene Chloride	10.0	U	10.0		ug/L			08/25/20 12:50	20
o-Xylene	10.0	U	10.0		ug/L			08/25/20 12:50	20
Styrene	10.0	U	10.0		ug/L			08/25/20 12:50	20
Tetrachloroethene	4.00	U	4.00		ug/L			08/25/20 12:50	20
Toluene	4.00	U	4.00		ug/L			08/25/20 12:50	20
trans-1,2-Dichloroethene	**57.0**		4.00		ug/L			08/25/20 12:50	20
trans-1,3-Dichloropropene	4.00	U	4.00		ug/L			08/25/20 12:50	20
Trichloroethene	4.00	U	4.00		ug/L			08/25/20 12:50	20
Trichlorofluoromethane	10.0	U	10.0		ug/L			08/25/20 12:50	20
Vinyl acetate	10.0	U	10.0		ug/L			08/25/20 12:50	20
Vinyl chloride	**463**		4.00		ug/L			08/25/20 12:50	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/25/20 12:50*	*20*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*08/25/20 12:50*	*20*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*08/25/20 12:50*	*20*
Toluene-d8 (Surr)	*103*		*80 - 120*		*08/25/20 12:50*	*20*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/17/20 09:28	08/17/20 20:29	1
Ethane (1C)	**79.5**		5.00		ug/L		08/17/20 09:28	08/17/20 20:29	1
Ethene (1C)	**1870**	**E**	5.00		ug/L		08/17/20 09:28	08/17/20 20:29	1
Methane (1C)	**9750**	**E**	5.00		ug/L		08/17/20 09:28	08/17/20 20:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*56*		*28 - 140*	*08/17/20 09:28*	*08/17/20 20:29*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	250	U	250		ug/L		08/18/20 08:32	08/18/20 12:07	50
Ethane (1C)	250	U	250		ug/L		08/18/20 08:32	08/18/20 12:07	50
Ethene (1C)	**3090**		250		ug/L		08/18/20 08:32	08/18/20 12:07	50
Methane (1C)	**16600**		250		ug/L		08/18/20 08:32	08/18/20 12:07	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*87*		*28 - 140*	*08/18/20 08:32*	*08/18/20 12:07*	*50*

Client Sample ID: BOP-73i-0820

Lab Sample ID: 410-10882-2

Date Collected: 08/14/20 10:15

Matrix: Water

Date Received: 08/15/20 09:54

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.500	U H	0.500		mg/L			08/18/20 12:59	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.00	U	5.00		mg/L			08/18/20 12:59	5

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**65.7**		0.200		mg/L		08/18/20 03:05	08/19/20 13:24	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**62.9**		0.206		mg/L		08/18/20 06:22	08/26/20 09:17	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**694**		50.0		mg/L			08/20/20 18:27	50

Client Sample ID: BOP-76i-0820

Lab Sample ID: 410-10882-3

Date Collected: 08/14/20 10:58

Matrix: Water

Date Received: 08/15/20 09:54

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			08/24/20 18:13	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/24/20 18:13	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/24/20 18:13	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/24/20 18:13	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 18:13	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/24/20 18:13	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/24/20 18:13	1
2-Butanone	**706**	**E**	5.00		ug/L			08/24/20 18:13	1
2-Hexanone	**54.7**		5.00		ug/L			08/24/20 18:13	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/24/20 18:13	1
Acetone	**30.5**		5.00		ug/L			08/24/20 18:13	1
Benzene	**1.19**		0.200		ug/L			08/24/20 18:13	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/24/20 18:13	1
Bromoform	1.00	U	1.00		ug/L			08/24/20 18:13	1
Bromomethane	0.500	U	0.500		ug/L			08/24/20 18:13	1
Carbon disulfide	0.500	U	0.500		ug/L			08/24/20 18:13	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/24/20 18:13	1
Chlorobenzene	0.500	U	0.500		ug/L			08/24/20 18:13	1
Chloroethane	0.500	U	0.500		ug/L			08/24/20 18:13	1
Chloroform	**1.42**		0.200		ug/L			08/24/20 18:13	1
Chloromethane	**7.90**		0.500		ug/L			08/24/20 18:13	1
cis-1,2-Dichloroethene	**0.878**		0.200		ug/L			08/24/20 18:13	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 18:13	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/24/20 18:13	1
Ethylbenzene	0.500	U	0.500		ug/L			08/24/20 18:13	1
Freon 113	0.500	U	0.500		ug/L			08/24/20 18:13	1
m&p-Xylene	0.500	U	0.500		ug/L			08/24/20 18:13	1

Client Sample ID: BOP-76i-0820
Date Collected: 08/14/20 10:58
Date Received: 08/15/20 09:54

Lab Sample ID: 410-10882-3
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	**0.708**		0.500		ug/L			08/24/20 18:13	1
o-Xylene	0.500	U	0.500		ug/L			08/24/20 18:13	1
Styrene	0.500	U	0.500		ug/L			08/24/20 18:13	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/24/20 18:13	1
Toluene	**0.324**		0.200		ug/L			08/24/20 18:13	1
trans-1,2-Dichloroethene	**0.322**		0.200		ug/L			08/24/20 18:13	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 18:13	1
Trichloroethene	**0.332**		0.200		ug/L			08/24/20 18:13	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/24/20 18:13	1
Vinyl acetate	0.500	U	0.500		ug/L			08/24/20 18:13	1
Vinyl chloride	**8.52**		0.200		ug/L			08/24/20 18:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*08/24/20 18:13*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*08/24/20 18:13*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*08/24/20 18:13*	*1*
Toluene-d8 (Surr)	*109*		*80 - 120*		*08/24/20 18:13*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.00	U	5.00		ug/L			08/26/20 18:12	10
1,1,2,2-Tetrachloroethane	2.00	U	2.00		ug/L			08/26/20 18:12	10
1,1,2-Trichloroethane	2.00	U	2.00		ug/L			08/26/20 18:12	10
1,1-Dichloroethane	5.00	U	5.00		ug/L			08/26/20 18:12	10
1,1-Dichloroethene	2.00	U	2.00		ug/L			08/26/20 18:12	10
1,2-Dichloroethane	2.00	U	2.00		ug/L			08/26/20 18:12	10
1,2-Dichloropropane	5.00	U	5.00		ug/L			08/26/20 18:12	10
2-Butanone	**820**		50.0		ug/L			08/26/20 18:12	10
2-Hexanone	50.0	U	50.0		ug/L			08/26/20 18:12	10
4-Methyl-2-pentanone	50.0	U	50.0		ug/L			08/26/20 18:12	10
Acetone	**56.4**		50.0		ug/L			08/26/20 18:12	10
Benzene	2.00	U	2.00		ug/L			08/26/20 18:12	10
Bromodichloromethane	5.00	U	5.00		ug/L			08/26/20 18:12	10
Bromoform	10.0	U	10.0		ug/L			08/26/20 18:12	10
Bromomethane	5.00	U	5.00		ug/L			08/26/20 18:12	10
Carbon disulfide	5.00	U	5.00		ug/L			08/26/20 18:12	10
Carbon tetrachloride	2.00	U	2.00		ug/L			08/26/20 18:12	10
Chlorobenzene	5.00	U	5.00		ug/L			08/26/20 18:12	10
Chloroethane	5.00	U	5.00		ug/L			08/26/20 18:12	10
Chloroform	2.00	U	2.00		ug/L			08/26/20 18:12	10
Chloromethane	**7.11**		5.00		ug/L			08/26/20 18:12	10
cis-1,2-Dichloroethene	2.00	U	2.00		ug/L			08/26/20 18:12	10
cis-1,3-Dichloropropene	2.00	U	2.00		ug/L			08/26/20 18:12	10
Dibromochloromethane	5.00	U	5.00		ug/L			08/26/20 18:12	10
Ethylbenzene	5.00	U	5.00		ug/L			08/26/20 18:12	10
Freon 113	5.00	U	5.00		ug/L			08/26/20 18:12	10
m&p-Xylene	5.00	U	5.00		ug/L			08/26/20 18:12	10
Methylene Chloride	5.00	U	5.00		ug/L			08/26/20 18:12	10
o-Xylene	5.00	U	5.00		ug/L			08/26/20 18:12	10
Styrene	5.00	U	5.00		ug/L			08/26/20 18:12	10

Client Sample ID: BOP-76i-0820
Lab Sample ID: 410-10882-3
Date Collected: 08/14/20 10:58
Matrix: Water
Date Received: 08/15/20 09:54

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	2.00	U	2.00		ug/L			08/26/20 18:12	10
Toluene	2.00	U	2.00		ug/L			08/26/20 18:12	10
trans-1,2-Dichloroethene	2.00	U	2.00		ug/L			08/26/20 18:12	10
trans-1,3-Dichloropropene	2.00	U	2.00		ug/L			08/26/20 18:12	10
Trichloroethene	2.00	U	2.00		ug/L			08/26/20 18:12	10
Trichlorofluoromethane	5.00	U	5.00		ug/L			08/26/20 18:12	10
Vinyl acetate	5.00	U	5.00		ug/L			08/26/20 18:12	10
Vinyl chloride	**7.29**		2.00		ug/L			08/26/20 18:12	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*08/26/20 18:12*	*10*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*08/26/20 18:12*	*10*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*08/26/20 18:12*	*10*
Toluene-d8 (Surr)	*109*		*80 - 120*		*08/26/20 18:12*	*10*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/17/20 09:28	08/17/20 20:48	1
Ethane (1C)	**28.1**		5.00		ug/L		08/17/20 09:28	08/17/20 20:48	1
Ethene (1C)	**74.3**		5.00		ug/L		08/17/20 09:28	08/17/20 20:48	1
Methane (1C)	**5360**	**E**	5.00		ug/L		08/17/20 09:28	08/17/20 20:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*191*	*X*	*28 - 140*	*08/17/20 09:28*	*08/17/20 20:48*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	250	U	250		ug/L		08/18/20 08:32	08/18/20 13:03	50
Ethane (1C)	250	U	250		ug/L		08/18/20 08:32	08/18/20 13:03	50
Ethene (1C)	250	U	250		ug/L		08/18/20 08:32	08/18/20 13:03	50
Methane (1C)	**9370**		250		ug/L		08/18/20 08:32	08/18/20 13:03	50

Method: RSK-175 - Dissolved Gases (GC) - RA

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/18/20 08:32	08/18/20 12:45	1
Ethane (1C)	**27.6**		5.00		ug/L		08/18/20 08:32	08/18/20 12:45	1
Ethene (1C)	**76.2**		5.00		ug/L		08/18/20 08:32	08/18/20 12:45	1
Methane (1C)	**5320**	**E**	5.00		ug/L		08/18/20 08:32	08/18/20 12:45	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**12.3**	**H**	0.500		mg/L			08/18/20 13:16	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**67.4**		5.00		mg/L			08/18/20 13:16	5

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**646**		1.00		mg/L		08/19/20 03:42	08/27/20 20:21	5

Client Sample ID: BOP-76i-0820
Lab Sample ID: 410-10882-3

Date Collected: 08/14/20 10:58
Matrix: Water
Date Received: 08/15/20 09:54

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	657		1.03		mg/L		08/31/20 04:56	08/31/20 21:26	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	12700		500		mg/L			08/20/20 18:41	500

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10882-4

Date Collected: 08/14/20 00:00
Matrix: Water
Date Received: 08/15/20 09:54

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			08/24/20 13:16	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/24/20 13:16	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/24/20 13:16	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/24/20 13:16	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 13:16	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/24/20 13:16	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/24/20 13:16	1
2-Butanone	5.00	U	5.00		ug/L			08/24/20 13:16	1
2-Hexanone	5.00	U	5.00		ug/L			08/24/20 13:16	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/24/20 13:16	1
Acetone	5.00	U	5.00		ug/L			08/24/20 13:16	1
Benzene	0.200	U	0.200		ug/L			08/24/20 13:16	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/24/20 13:16	1
Bromoform	1.00	U	1.00		ug/L			08/24/20 13:16	1
Bromomethane	0.500	U	0.500		ug/L			08/24/20 13:16	1
Carbon disulfide	0.500	U	0.500		ug/L			08/24/20 13:16	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/24/20 13:16	1
Chlorobenzene	0.500	U	0.500		ug/L			08/24/20 13:16	1
Chloroethane	0.500	U	0.500		ug/L			08/24/20 13:16	1
Chloroform	0.200	U	0.200		ug/L			08/24/20 13:16	1
Chloromethane	0.500	U	0.500		ug/L			08/24/20 13:16	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 13:16	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 13:16	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/24/20 13:16	1
Ethylbenzene	0.500	U	0.500		ug/L			08/24/20 13:16	1
Freon 113	0.500	U	0.500		ug/L			08/24/20 13:16	1
m&p-Xylene	0.500	U	0.500		ug/L			08/24/20 13:16	1
Methylene Chloride	0.500	U	0.500		ug/L			08/24/20 13:16	1
o-Xylene	0.500	U	0.500		ug/L			08/24/20 13:16	1
Styrene	0.500	U	0.500		ug/L			08/24/20 13:16	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/24/20 13:16	1
Toluene	0.200	U	0.200		ug/L			08/24/20 13:16	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 13:16	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 13:16	1
Trichloroethene	0.200	U	0.200		ug/L			08/24/20 13:16	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/24/20 13:16	1
Vinyl acetate	0.500	U	0.500		ug/L			08/24/20 13:16	1
Vinyl chloride	0.200	U	0.200		ug/L			08/24/20 13:16	1

Client: Landau & Associates, Inc.
Job ID: 410-10882-1
Project/Site: Boeing Portland/00251116.120.412

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10882-4
Date Collected: 08/14/20 00:00
Matrix: Water
Date Received: 08/15/20 09:54

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		08/24/20 13:16	1
Dibromofluoromethane (Surr)	103		80 - 120		08/24/20 13:16	1
4-Bromofluorobenzene (Surr)	105		80 - 120		08/24/20 13:16	1
Toluene-d8 (Surr)	101		80 - 120		08/24/20 13:16	1

Surrogate Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland/00251116.120.412

Job ID: 410-10882-1

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)
410-10882-1	BOP-77i-0820	97	96	104	103
410-10882-2 - DL	BOP-73i-0820	102	103	93	103
410-10882-2	BOP-73i-0820	107	106	118	109
410-10882-3	BOP-76i-0820	98	99	104	109
410-10882-3 - DL	BOP-76i-0820	103	101	105	109
410-10882-4	Trip Blanks	99	103	105	101
LCS 410-36419/5	Lab Control Sample	101	103	104	102
LCS 410-36419/7	Lab Control Sample	103	103	104	99
LCS 410-36866/6	Lab Control Sample	105	107	105	107
LCS 410-36866/7	Lab Control Sample	103	101	95	92
LCS 410-37329/5	Lab Control Sample	98	100	110	106
LCS 410-37329/7	Lab Control Sample	100	104	102	112
LCSD 410-36419/6	Lab Control Sample Dup	98	102	106	103
LCSD 410-36419/8	Lab Control Sample Dup	100	102	104	100
LCSD 410-36866/8	Lab Control Sample Dup	99	104	108	105
LCSD 410-37329/6	Lab Control Sample Dup	102	104	125 X	109
LCSD 410-37329/8	Lab Control Sample Dup	97	102	98	99
MB 410-36419/10	Method Blank	102	102	105	102
MB 410-36866/10	Method Blank	102	101	115	111
MB 410-37329/10	Method Blank	102	102	112	89

Surrogate Legend

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

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		Propene1
Lab Sample ID	Client Sample ID	(28-140)
410-10882-1	BOP-77i-0820	76
410-10882-1 - DL	BOP-77i-0820	84
410-10882-2	BOP-73i-0820	56
410-10882-2 - DL	BOP-73i-0820	87
410-10882-3	BOP-76i-0820	191 X
LCS 410-33918/2-A	Lab Control Sample	107
LCS 410-34365/2-A	Lab Control Sample	104
LCSD 410-33918/3-A	Lab Control Sample Dup	106
LCSD 410-34365/3-A	Lab Control Sample Dup	104
MB 410-33918/1-A	Method Blank	109
MB 410-34365/1-A	Method Blank	105

Surrogate Legend

Propene = Propene

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

Lab Sample ID: MB 410-36419/10
Matrix: Water
Analysis Batch: 36419

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			08/24/20 12:13	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/24/20 12:13	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/24/20 12:13	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/24/20 12:13	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 12:13	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/24/20 12:13	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/24/20 12:13	1
2-Butanone	5.00	U	5.00		ug/L			08/24/20 12:13	1
2-Hexanone	5.00	U	5.00		ug/L			08/24/20 12:13	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/24/20 12:13	1
Acetone	5.00	U	5.00		ug/L			08/24/20 12:13	1
Benzene	0.200	U	0.200		ug/L			08/24/20 12:13	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/24/20 12:13	1
Bromoform	1.00	U	1.00		ug/L			08/24/20 12:13	1
Bromomethane	0.500	U	0.500		ug/L			08/24/20 12:13	1
Carbon disulfide	0.500	U	0.500		ug/L			08/24/20 12:13	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/24/20 12:13	1
Chlorobenzene	0.500	U	0.500		ug/L			08/24/20 12:13	1
Chloroethane	0.500	U	0.500		ug/L			08/24/20 12:13	1
Chloroform	0.200	U	0.200		ug/L			08/24/20 12:13	1
Chloromethane	0.500	U	0.500		ug/L			08/24/20 12:13	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 12:13	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 12:13	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/24/20 12:13	1
Ethylbenzene	0.500	U	0.500		ug/L			08/24/20 12:13	1
Freon 113	0.500	U	0.500		ug/L			08/24/20 12:13	1
m&p-Xylene	0.500	U	0.500		ug/L			08/24/20 12:13	1
Methylene Chloride	0.500	U	0.500		ug/L			08/24/20 12:13	1
o-Xylene	0.500	U	0.500		ug/L			08/24/20 12:13	1
Styrene	0.500	U	0.500		ug/L			08/24/20 12:13	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/24/20 12:13	1
Toluene	0.200	U	0.200		ug/L			08/24/20 12:13	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/24/20 12:13	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/24/20 12:13	1
Trichloroethene	0.200	U	0.200		ug/L			08/24/20 12:13	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/24/20 12:13	1
Vinyl acetate	0.500	U	0.500		ug/L			08/24/20 12:13	1
Vinyl chloride	0.200	U	0.200		ug/L			08/24/20 12:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/24/20 12:13*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/24/20 12:13*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*08/24/20 12:13*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*08/24/20 12:13*	*1*

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

Lab Sample ID: LCS 410-36419/5
Matrix: Water
Analysis Batch: 36419

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	4.963		ug/L		99	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.244		ug/L		105	75 - 123
1,1,2-Trichloroethane	5.00	5.198		ug/L		104	80 - 120
1,1-Dichloroethane	5.00	5.482		ug/L		110	74 - 120
1,1-Dichloroethene	5.00	5.048		ug/L		101	80 - 131
1,2-Dichloroethane	5.00	5.307		ug/L		106	69 - 122
1,2-Dichloropropane	5.00	5.589		ug/L		112	80 - 120
2-Butanone	37.5	38.31		ug/L		102	59 - 141
2-Hexanone	25.0	27.32		ug/L		109	52 - 140
4-Methyl-2-pentanone	25.0	26.41		ug/L		106	55 - 140
Acetone	37.5	37.15		ug/L		99	60 - 146
Benzene	5.00	5.335		ug/L		107	80 - 120
Bromodichloromethane	5.00	4.997		ug/L		100	73 - 124
Bromoform	5.00	4.312		ug/L		86	49 - 144
Bromomethane	5.00	4.079		ug/L		82	60 - 136
Carbon disulfide	5.00	4.035		ug/L		81	67 - 130
Carbon tetrachloride	5.00	4.915		ug/L		98	64 - 141
Chlorobenzene	5.00	5.159		ug/L		103	80 - 120
Chloroethane	5.00	4.253		ug/L		85	63 - 120
Chloroform	5.00	5.349		ug/L		107	80 - 120
Chloromethane	5.00	4.343		ug/L		87	56 - 124
cis-1,2-Dichloroethene	5.00	5.508		ug/L		110	80 - 122
cis-1,3-Dichloropropene	5.00	5.379		ug/L		108	67 - 121
Dibromochloromethane	5.00	4.705		ug/L		94	64 - 138
Ethylbenzene	5.00	5.236		ug/L		105	80 - 120
Freon 113	5.00	4.358		ug/L		87	75 - 133
m&p-Xylene	10.0	10.63		ug/L		106	80 - 120
Methylene Chloride	5.00	5.207		ug/L		104	80 - 120
o-Xylene	5.00	4.967		ug/L		99	80 - 120
Styrene	5.00	5.289		ug/L		106	80 - 120
Tetrachloroethene	5.00	5.162		ug/L		103	80 - 120
Toluene	5.00	5.169		ug/L		103	80 - 120
trans-1,2-Dichloroethene	5.00	5.113		ug/L		102	80 - 122
trans-1,3-Dichloropropene	5.00	4.862		ug/L		97	61 - 129
Trichloroethene	5.00	5.239		ug/L		105	80 - 120
Trichlorofluoromethane	5.00	4.497		ug/L		90	62 - 136
Vinyl chloride	5.00	4.124		ug/L		82	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

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

Lab Sample ID: LCS 410-36419/7
Matrix: Water
Analysis Batch: 36419

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	13.81		ug/L		110	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 410-36419/6
Matrix: Water
Analysis Batch: 36419

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	5.017		ug/L		100	78 - 126	1	30
1,1,2,2-Tetrachloroethane			5.00	5.189		ug/L		104	75 - 123	1	30
1,1,2-Trichloroethane			5.00	5.234		ug/L		105	80 - 120	1	30
1,1-Dichloroethane			5.00	5.462		ug/L		109	74 - 120	0	30
1,1-Dichloroethene			5.00	4.992		ug/L		100	80 - 131	1	30
1,2-Dichloroethane			5.00	5.257		ug/L		105	69 - 122	1	30
1,2-Dichloropropane			5.00	5.655		ug/L		113	80 - 120	1	30
2-Butanone			37.5	37.85		ug/L		101	59 - 141	1	30
2-Hexanone			25.0	26.92		ug/L		108	52 - 140	1	30
4-Methyl-2-pentanone			25.0	25.88		ug/L		104	55 - 140	2	30
Acetone			37.5	36.68		ug/L		98	60 - 146	1	30
Benzene			5.00	5.327		ug/L		107	80 - 120	0	30
Bromodichloromethane			5.00	5.148		ug/L		103	73 - 124	3	30
Bromoform			5.00	4.226		ug/L		85	49 - 144	2	30
Bromomethane			5.00	4.102		ug/L		82	60 - 136	1	30
Carbon disulfide			5.00	4.029		ug/L		81	67 - 130	0	30
Carbon tetrachloride			5.00	4.867		ug/L		97	64 - 141	1	30
Chlorobenzene			5.00	5.279		ug/L		106	80 - 120	2	30
Chloroethane			5.00	4.340		ug/L		87	63 - 120	2	30
Chloroform			5.00	5.378		ug/L		108	80 - 120	1	30
Chloromethane			5.00	4.407		ug/L		88	56 - 124	1	30
cis-1,2-Dichloroethene			5.00	5.456		ug/L		109	80 - 122	1	30
cis-1,3-Dichloropropene			5.00	5.351		ug/L		107	67 - 121	1	30
Dibromochloromethane			5.00	4.702		ug/L		94	64 - 138	0	30
Ethylbenzene			5.00	5.273		ug/L		105	80 - 120	1	30
Freon 113			5.00	4.369		ug/L		87	75 - 133	0	30
m&p-Xylene			10.0	10.35		ug/L		103	80 - 120	3	30
Methylene Chloride			5.00	5.267		ug/L		105	80 - 120	1	30
o-Xylene			5.00	5.158		ug/L		103	80 - 120	4	30
Styrene			5.00	5.367		ug/L		107	80 - 120	1	30
Tetrachloroethene			5.00	5.170		ug/L		103	80 - 120	0	30
Toluene			5.00	5.216		ug/L		104	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	5.066		ug/L		101	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	4.900		ug/L		98	61 - 129	1	30
Trichloroethene			5.00	5.291		ug/L		106	80 - 120	1	30

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

Lab Sample ID: LCSD 410-36419/6
Matrix: Water
Analysis Batch: 36419

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	4.507		ug/L		90	62 - 136	0	30
Vinyl chloride			5.00	4.209		ug/L		84	60 - 125	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 410-36419/8
Matrix: Water
Analysis Batch: 36419

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	13.59		ug/L		109	38 - 145	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: MB 410-36866/10
Matrix: Water
Analysis Batch: 36866

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			08/25/20 11:04	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/25/20 11:04	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/25/20 11:04	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/25/20 11:04	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/25/20 11:04	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/25/20 11:04	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/25/20 11:04	1
2-Butanone	5.00	U	5.00		ug/L			08/25/20 11:04	1
2-Hexanone	5.00	U	5.00		ug/L			08/25/20 11:04	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/25/20 11:04	1
Acetone	5.00	U	5.00		ug/L			08/25/20 11:04	1
Benzene	0.200	U	0.200		ug/L			08/25/20 11:04	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/25/20 11:04	1
Bromoform	1.00	U	1.00		ug/L			08/25/20 11:04	1
Bromomethane	0.500	U	0.500		ug/L			08/25/20 11:04	1
Carbon disulfide	0.500	U	0.500		ug/L			08/25/20 11:04	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/25/20 11:04	1
Chlorobenzene	0.500	U	0.500		ug/L			08/25/20 11:04	1
Chloroethane	0.500	U	0.500		ug/L			08/25/20 11:04	1
Chloroform	0.200	U	0.200		ug/L			08/25/20 11:04	1
Chloromethane	0.500	U	0.500		ug/L			08/25/20 11:04	1

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

Lab Sample ID: MB 410-36866/10
Matrix: Water
Analysis Batch: 36866

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			08/25/20 11:04	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/25/20 11:04	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/25/20 11:04	1
Ethylbenzene	0.500	U	0.500		ug/L			08/25/20 11:04	1
Freon 113	0.500	U	0.500		ug/L			08/25/20 11:04	1
m&p-Xylene	0.500	U	0.500		ug/L			08/25/20 11:04	1
Methylene Chloride	0.500	U	0.500		ug/L			08/25/20 11:04	1
o-Xylene	0.500	U	0.500		ug/L			08/25/20 11:04	1
Styrene	0.500	U	0.500		ug/L			08/25/20 11:04	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/25/20 11:04	1
Toluene	0.200	U	0.200		ug/L			08/25/20 11:04	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/25/20 11:04	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/25/20 11:04	1
Trichloroethene	0.200	U	0.200		ug/L			08/25/20 11:04	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/25/20 11:04	1
Vinyl acetate	0.500	U	0.500		ug/L			08/25/20 11:04	1
Vinyl chloride	0.200	U	0.200		ug/L			08/25/20 11:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/25/20 11:04*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*08/25/20 11:04*	*1*
4-Bromofluorobenzene (Surr)	*115*		*80 - 120*		*08/25/20 11:04*	*1*
Toluene-d8 (Surr)	*111*		*80 - 120*		*08/25/20 11:04*	*1*

Lab Sample ID: LCS 410-36866/6
Matrix: Water
Analysis Batch: 36866

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	5.348		ug/L		107	78 - 126		
1,1,2,2-Tetrachloroethane			5.00	5.396		ug/L		108	75 - 123		
1,1,2-Trichloroethane			5.00	5.359		ug/L		107	80 - 120		
1,1-Dichloroethane			5.00	5.823		ug/L		116	74 - 120		
1,1-Dichloroethene			5.00	5.466		ug/L		109	80 - 131		
1,2-Dichloroethane			5.00	5.243		ug/L		105	69 - 122		
1,2-Dichloropropane			5.00	5.476		ug/L		110	80 - 120		
2-Butanone			37.5	40.91		ug/L		109	59 - 141		
2-Hexanone			25.0	26.41		ug/L		106	52 - 140		
4-Methyl-2-pentanone			25.0	25.83		ug/L		103	55 - 140		
Acetone			37.5	40.87		ug/L		109	60 - 146		
Benzene			5.00	5.583		ug/L		112	80 - 120		
Bromodichloromethane			5.00	4.970		ug/L		99	73 - 124		
Bromoform			5.00	4.373		ug/L		87	49 - 144		
Bromomethane			5.00	4.248		ug/L		85	60 - 136		
Carbon disulfide			5.00	4.805		ug/L		96	67 - 130		
Carbon tetrachloride			5.00	5.166		ug/L		103	64 - 141		
Chlorobenzene			5.00	5.230		ug/L		105	80 - 120		
Chloroethane			5.00	4.391		ug/L		88	63 - 120		

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

Lab Sample ID: LCS 410-36866/6
Matrix: Water
Analysis Batch: 36866

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	5.722		ug/L		114	80 - 120		
Chloromethane			5.00	4.411		ug/L		88	56 - 124		
cis-1,2-Dichloroethene			5.00	5.971		ug/L		119	80 - 122		
cis-1,3-Dichloropropene			5.00	5.043		ug/L		101	67 - 121		
Dibromochloromethane			5.00	4.757		ug/L		95	64 - 138		
Ethylbenzene			5.00	5.383		ug/L		108	80 - 120		
Freon 113			5.00	4.787		ug/L		96	75 - 133		
m&p-Xylene			10.0	10.73		ug/L		107	80 - 120		
Methylene Chloride			5.00	5.561		ug/L		111	80 - 120		
o-Xylene			5.00	5.304		ug/L		106	80 - 120		
Styrene			5.00	5.610		ug/L		112	80 - 120		
Tetrachloroethene			5.00	5.359		ug/L		107	80 - 120		
Toluene			5.00	4.969		ug/L		99	80 - 120		
trans-1,2-Dichloroethene			5.00	5.564		ug/L		111	80 - 122		
trans-1,3-Dichloropropene			5.00	4.805		ug/L		96	61 - 129		
Trichloroethene			5.00	5.250		ug/L		105	80 - 120		
Trichlorofluoromethane			5.00	4.768		ug/L		95	62 - 136		
Vinyl chloride			5.00	4.210		ug/L		84	60 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
Dibromofluoromethane (Surr)	*107*		*80 - 120*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*
Toluene-d8 (Surr)	*107*		*80 - 120*

Lab Sample ID: LCS 410-36866/7
Matrix: Water
Analysis Batch: 36866

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	12.84		ug/L		103	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*92*		*80 - 120*

Lab Sample ID: LCSD 410-36866/8
Matrix: Water
Analysis Batch: 36866

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	13.09		ug/L		105	38 - 145	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*

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

Lab Sample ID: LCSD 410-36866/8
Matrix: Water
Analysis Batch: 36866

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

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*108*		*80 - 120*
Toluene-d8 (Surr)	*105*		*80 - 120*

Lab Sample ID: MB 410-37329/10
Matrix: Water
Analysis Batch: 37329

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			08/26/20 11:06	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			08/26/20 11:06	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			08/26/20 11:06	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/26/20 11:06	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			08/26/20 11:06	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			08/26/20 11:06	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/26/20 11:06	1
2-Butanone	5.00	U	5.00		ug/L			08/26/20 11:06	1
2-Hexanone	5.00	U	5.00		ug/L			08/26/20 11:06	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/26/20 11:06	1
Acetone	5.00	U	5.00		ug/L			08/26/20 11:06	1
Benzene	0.200	U	0.200		ug/L			08/26/20 11:06	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/26/20 11:06	1
Bromoform	1.00	U	1.00		ug/L			08/26/20 11:06	1
Bromomethane	0.500	U	0.500		ug/L			08/26/20 11:06	1
Carbon disulfide	0.500	U	0.500		ug/L			08/26/20 11:06	1
Carbon tetrachloride	0.200	U	0.200		ug/L			08/26/20 11:06	1
Chlorobenzene	0.500	U	0.500		ug/L			08/26/20 11:06	1
Chloroethane	0.500	U	0.500		ug/L			08/26/20 11:06	1
Chloroform	0.200	U	0.200		ug/L			08/26/20 11:06	1
Chloromethane	0.500	U	0.500		ug/L			08/26/20 11:06	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/26/20 11:06	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/26/20 11:06	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/26/20 11:06	1
Ethylbenzene	0.500	U	0.500		ug/L			08/26/20 11:06	1
Freon 113	0.500	U	0.500		ug/L			08/26/20 11:06	1
m&p-Xylene	0.500	U	0.500		ug/L			08/26/20 11:06	1
Methylene Chloride	0.500	U	0.500		ug/L			08/26/20 11:06	1
o-Xylene	0.500	U	0.500		ug/L			08/26/20 11:06	1
Styrene	0.500	U	0.500		ug/L			08/26/20 11:06	1
Tetrachloroethene	0.200	U	0.200		ug/L			08/26/20 11:06	1
Toluene	0.200	U	0.200		ug/L			08/26/20 11:06	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			08/26/20 11:06	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			08/26/20 11:06	1
Trichloroethene	0.200	U	0.200		ug/L			08/26/20 11:06	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/26/20 11:06	1
Vinyl acetate	0.500	U	0.500		ug/L			08/26/20 11:06	1
Vinyl chloride	0.200	U	0.200		ug/L			08/26/20 11:06	1

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

Lab Sample ID: MB 410-37329/10
Matrix: Water
Analysis Batch: 37329

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/26/20 11:06*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/26/20 11:06*	*1*
4-Bromofluorobenzene (Surr)	*112*		*80 - 120*		*08/26/20 11:06*	*1*
Toluene-d8 (Surr)	*89*		*80 - 120*		*08/26/20 11:06*	*1*

Lab Sample ID: LCS 410-37329/5
Matrix: Water
Analysis Batch: 37329

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	5.051		ug/L		101	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.449		ug/L		109	75 - 123
1,1,2-Trichloroethane	5.00	5.370		ug/L		107	80 - 120
1,1-Dichloroethane	5.00	5.463		ug/L		109	74 - 120
1,1-Dichloroethene	5.00	5.098		ug/L		102	80 - 131
1,2-Dichloroethane	5.00	5.264		ug/L		105	69 - 122
1,2-Dichloropropane	5.00	5.649		ug/L		113	80 - 120
2-Butanone	37.5	35.50		ug/L		95	59 - 141
2-Hexanone	25.0	24.71		ug/L		99	52 - 140
4-Methyl-2-pentanone	25.0	23.08		ug/L		92	55 - 140
Acetone	37.5	35.87		ug/L		96	60 - 146
Benzene	5.00	5.330		ug/L		107	80 - 120
Bromodichloromethane	5.00	5.004		ug/L		100	73 - 124
Bromoform	5.00	4.675		ug/L		94	49 - 144
Bromomethane	5.00	3.965		ug/L		79	60 - 136
Carbon disulfide	5.00	4.506		ug/L		90	67 - 130
Carbon tetrachloride	5.00	5.074		ug/L		101	64 - 141
Chlorobenzene	5.00	5.201		ug/L		104	80 - 120
Chloroethane	5.00	4.105		ug/L		82	63 - 120
Chloroform	5.00	5.059		ug/L		101	80 - 120
Chloromethane	5.00	4.154		ug/L		83	56 - 124
cis-1,2-Dichloroethene	5.00	5.362		ug/L		107	80 - 122
cis-1,3-Dichloropropene	5.00	5.160		ug/L		103	67 - 121
Dibromochloromethane	5.00	5.001		ug/L		100	64 - 138
Ethylbenzene	5.00	5.304		ug/L		106	80 - 120
Freon 113	5.00	4.421		ug/L		88	75 - 133
m&p-Xylene	10.0	10.46		ug/L		105	80 - 120
Methylene Chloride	5.00	5.201		ug/L		104	80 - 120
o-Xylene	5.00	5.383		ug/L		108	80 - 120
Styrene	5.00	5.559		ug/L		111	80 - 120
Tetrachloroethene	5.00	5.396		ug/L		108	80 - 120
Toluene	5.00	5.421		ug/L		108	80 - 120
trans-1,2-Dichloroethene	5.00	4.979		ug/L		100	80 - 122
trans-1,3-Dichloropropene	5.00	5.011		ug/L		100	61 - 129
Trichloroethene	5.00	5.308		ug/L		106	80 - 120
Trichlorofluoromethane	5.00	4.570		ug/L		91	62 - 136
Vinyl chloride	5.00	3.982		ug/L		80	60 - 125

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

Lab Sample ID: LCS 410-37329/5
Matrix: Water
Analysis Batch: 37329

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	110		80 - 120
Toluene-d8 (Surr)	106		80 - 120

Lab Sample ID: LCS 410-37329/7
Matrix: Water
Analysis Batch: 37329

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	13.52		ug/L		108	38 - 145		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	104		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120
Toluene-d8 (Surr)	112		80 - 120

Lab Sample ID: LCSD 410-37329/6
Matrix: Water
Analysis Batch: 37329

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	4.747		ug/L		95	78 - 126	6	30
1,1,2,2-Tetrachloroethane			5.00	5.565		ug/L		111	75 - 123	2	30
1,1,2-Trichloroethane			5.00	5.513		ug/L		110	80 - 120	3	30
1,1-Dichloroethane			5.00	5.230		ug/L		105	74 - 120	4	30
1,1-Dichloroethene			5.00	4.822		ug/L		96	80 - 131	6	30
1,2-Dichloroethane			5.00	5.147		ug/L		103	69 - 122	2	30
1,2-Dichloropropane			5.00	5.342		ug/L		107	80 - 120	6	30
2-Butanone			37.5	34.87		ug/L		93	59 - 141	2	30
2-Hexanone			25.0	21.04		ug/L		84	52 - 140	16	30
4-Methyl-2-pentanone			25.0	21.00		ug/L		84	55 - 140	9	30
Acetone			37.5	36.48		ug/L		97	60 - 146	2	30
Benzene			5.00	5.107		ug/L		102	80 - 120	4	30
Bromodichloromethane			5.00	4.726		ug/L		95	73 - 124	6	30
Bromoform			5.00	5.225		ug/L		105	49 - 144	11	30
Bromomethane			5.00	3.677		ug/L		74	60 - 136	8	30
Carbon disulfide			5.00	4.204		ug/L		84	67 - 130	7	30
Carbon tetrachloride			5.00	4.705		ug/L		94	64 - 141	8	30
Chlorobenzene			5.00	5.091		ug/L		102	80 - 120	2	30
Chloroethane			5.00	3.681		ug/L		74	63 - 120	11	30
Chloroform			5.00	5.053		ug/L		101	80 - 120	0	30
Chloromethane			5.00	3.820		ug/L		76	56 - 124	8	30
cis-1,2-Dichloroethene			5.00	5.294		ug/L		106	80 - 122	1	30
cis-1,3-Dichloropropene			5.00	4.920		ug/L		98	67 - 121	5	30
Dibromochloromethane			5.00	5.102		ug/L		102	64 - 138	2	30
Ethylbenzene			5.00	5.294		ug/L		106	80 - 120	0	30

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

Lab Sample ID: LCSD 410-37329/6
Matrix: Water
Analysis Batch: 37329

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
Freon 113			5.00	4.158		ug/L		83	75 - 133	6	30
m&p-Xylene			10.0	11.17		ug/L		112	80 - 120	7	30
Methylene Chloride			5.00	5.013		ug/L		100	80 - 120	4	30
o-Xylene			5.00	5.737		ug/L		115	80 - 120	6	30
Styrene			5.00	5.884		ug/L		118	80 - 120	6	30
Tetrachloroethene			5.00	5.311		ug/L		106	80 - 120	2	30
Toluene			5.00	5.384		ug/L		108	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	4.816		ug/L		96	80 - 122	3	30
trans-1,3-Dichloropropene			5.00	4.929		ug/L		99	61 - 129	2	30
Trichloroethene			5.00	5.014		ug/L		100	80 - 120	6	30
Trichlorofluoromethane			5.00	4.120		ug/L		82	62 - 136	10	30
Vinyl chloride			5.00	3.626		ug/L		73	60 - 125	9	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*125*	*X*	*80 - 120*
Toluene-d8 (Surr)	*109*		*80 - 120*

Lab Sample ID: LCSD 410-37329/8
Matrix: Water
Analysis Batch: 37329

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	13.28		ug/L		106	38 - 145	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-33918/1-A
Matrix: Water
Analysis Batch: 34044

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33918

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/17/20 09:28	08/17/20 16:40	1
Ethane (1C)	5.00	U	5.00		ug/L		08/17/20 09:28	08/17/20 16:40	1
Ethene (1C)	5.00	U	5.00		ug/L		08/17/20 09:28	08/17/20 16:40	1
Methane (1C)	5.00	U	5.00		ug/L		08/17/20 09:28	08/17/20 16:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*109*		*28 - 140*	*08/17/20 09:28*	*08/17/20 16:40*	*1*

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 410-33918/2-A
Matrix: Water
Analysis Batch: 34044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33918

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acetylene (1C)			51.2	57.94		ug/L		113	57 - 146		
Ethane (1C)			59.4	62.90		ug/L		106	85 - 115		
Ethene (1C)			60.4	65.36		ug/L		108	83 - 115		
Methane (1C)			59.4	65.13		ug/L		110	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*107*		*28 - 140*

Lab Sample ID: LCSD 410-33918/3-A
Matrix: Water
Analysis Batch: 34044

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 33918

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetylene (1C)			51.2	55.74		ug/L		109	57 - 146	4	20
Ethane (1C)			59.4	62.97		ug/L		106	85 - 115	0	20
Ethene (1C)			60.4	63.99		ug/L		106	83 - 115	2	20
Methane (1C)			59.4	65.54		ug/L		110	85 - 115	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*106*		*28 - 140*

Lab Sample ID: MB 410-34365/1-A
Matrix: Water
Analysis Batch: 34380

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 34365

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		08/18/20 08:32	08/18/20 09:38	1
Ethane (1C)	5.00	U	5.00		ug/L		08/18/20 08:32	08/18/20 09:38	1
Ethene (1C)	5.00	U	5.00		ug/L		08/18/20 08:32	08/18/20 09:38	1
Methane (1C)	5.00	U	5.00		ug/L		08/18/20 08:32	08/18/20 09:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*105*		*28 - 140*	*08/18/20 08:32*	*08/18/20 09:38*	*1*

Lab Sample ID: LCS 410-34365/2-A
Matrix: Water
Analysis Batch: 34380

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 34365

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acetylene (1C)			51.2	61.24		ug/L		120	57 - 146		
Ethane (1C)			59.4	61.60		ug/L		104	85 - 115		
Ethene (1C)			60.4	63.14		ug/L		105	83 - 115		
Methane (1C)			59.4	65.01		ug/L		109	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*104*		*28 - 140*

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 410-34365/3-A
Matrix: Water
Analysis Batch: 34380

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 34365

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetylene (1C)			51.2	54.66		ug/L		107	57 - 146	11	20
Ethane (1C)			59.4	59.66		ug/L		100	85 - 115	3	20
Ethene (1C)			60.4	61.60		ug/L		102	83 - 115	2	20
Methane (1C)			59.4	62.83		ug/L		106	85 - 115	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*104*		*28 - 140*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-34311/4
Matrix: Water
Analysis Batch: 34311

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U	0.100		mg/L			08/18/20 10:20	1

Lab Sample ID: LCS 410-34311/3
Matrix: Water
Analysis Batch: 34311

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.7923		mg/L		106	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-34312/4
Matrix: Water
Analysis Batch: 34312

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			08/18/20 10:20	1

Lab Sample ID: LCS 410-34312/3
Matrix: Water
Analysis Batch: 34312

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.821		mg/L		104	90 - 110		

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 410-34250/1-A
Matrix: Water
Analysis Batch: 37472

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 34250

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.206	U	0.206		mg/L		08/18/20 06:22	08/26/20 08:22	1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-34250/2-A
Matrix: Water
Analysis Batch: 37472

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 34250

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.402	0.4039		mg/L		100	80 - 120

Lab Sample ID: MB 410-39037/1-A
Matrix: Water
Analysis Batch: 39455

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 39037

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.206	U	0.206		mg/L		08/31/20 04:56	08/31/20 19:14	1

Lab Sample ID: LCS 410-39037/2-A
Matrix: Water
Analysis Batch: 39455

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 39037

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.402	0.3853		mg/L		96	80 - 120

Lab Sample ID: MB 410-39482/1-A
Matrix: Water
Analysis Batch: 39905

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 39482

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.206	U	0.206		mg/L		09/01/20 05:34	09/01/20 17:21	1

Lab Sample ID: LCS 410-39482/2-A
Matrix: Water
Analysis Batch: 39905

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 39482

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.402	0.4222		mg/L		105	80 - 120

Lab Sample ID: MB 410-34216/1-A
Matrix: Water
Analysis Batch: 34967

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 34216

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.200	U	0.200		mg/L		08/18/20 03:05	08/19/20 12:08	1

Lab Sample ID: LCS 410-34216/2-A
Matrix: Water
Analysis Batch: 34967

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 34216

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.402	0.4313		mg/L		107	80 - 120

Lab Sample ID: MB 410-34704/1-A
Matrix: Water
Analysis Batch: 37096

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 34704

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.200	U	0.200		mg/L		08/19/20 03:42	08/25/20 12:32	1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 410-34704/1-A
Matrix: Water
Analysis Batch: 38214

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 34704

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.200	U	0.200		mg/L		08/19/20 03:42	08/27/20 19:20	1

Lab Sample ID: LCS 410-34704/2-A
Matrix: Water
Analysis Batch: 37096

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 34704

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			0.402	0.3928		mg/L		98	80 - 120		

Lab Sample ID: LCS 410-34704/2-A
Matrix: Water
Analysis Batch: 38214

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 34704

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			0.402	0.4335		mg/L		108	80 - 120		

Lab Sample ID: 410-10882-1 MS
Matrix: Water
Analysis Batch: 37096

Client Sample ID: BOP-77i-0820
Prep Type: Total Recoverable
Prep Batch: 34704

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron	426	E	0.402	448.8	E 4	mg/L		5748	75 - 125		

Lab Sample ID: 410-10882-1 MS
Matrix: Water
Analysis Batch: 38214

Client Sample ID: BOP-77i-0820
Prep Type: Total Recoverable
Prep Batch: 34704

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron	374		0.402	357.3	4	mg/L		-4074	75 - 125		

Lab Sample ID: 410-10882-1 MSD
Matrix: Water
Analysis Batch: 37096

Client Sample ID: BOP-77i-0820
Prep Type: Total Recoverable
Prep Batch: 34704

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	426	E	0.402	465.6	E 4	mg/L		9930	75 - 125	4	20

Lab Sample ID: 410-10882-1 MSD
Matrix: Water
Analysis Batch: 38214

Client Sample ID: BOP-77i-0820
Prep Type: Total Recoverable
Prep Batch: 34704

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	374		0.402	355.0	4	mg/L		-4634	75 - 125	1	20

Lab Sample ID: 410-10882-1 DU
Matrix: Water
Analysis Batch: 37096

Client Sample ID: BOP-77i-0820
Prep Type: Total Recoverable
Prep Batch: 34704

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Iron	426	E		447.3	E	mg/L				5	20

Client: Landau & Associates, Inc.
Job ID: 410-10882-1
Project/Site: Boeing Portland/00251116.120.412

Method: 6010D - Metals (ICP)

Lab Sample ID: 410-10882-1 DU
Matrix: Water
Analysis Batch: 38214

Client Sample ID: BOP-77i-0820
Prep Type: Total Recoverable
Prep Batch: 34704

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Iron	374			359.7		mg/L				4	20

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-35808/5
Matrix: Water
Analysis Batch: 35808

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			08/20/20 15:07	1

Lab Sample ID: LCS 410-35808/4
Matrix: Water
Analysis Batch: 35808

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	25.15		mg/L		101	91 - 113		

GC/MS VOA

Analysis Batch: 36419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-1	BOP-77i-0820	Total/NA	Water	8260C LL	
410-10882-3	BOP-76i-0820	Total/NA	Water	8260C LL	
410-10882-4	Trip Blanks	Total/NA	Water	8260C LL	
MB 410-36419/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-36419/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-36419/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-36419/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-36419/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Analysis Batch: 36866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-2 - DL	BOP-73i-0820	Total/NA	Water	8260C LL	
MB 410-36866/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-36866/6	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-36866/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-36866/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Analysis Batch: 37329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-2	BOP-73i-0820	Total/NA	Water	8260C LL	
410-10882-3 - DL	BOP-76i-0820	Total/NA	Water	8260C LL	
MB 410-37329/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-37329/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-37329/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-37329/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-37329/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

GC VOA

Prep Batch: 33918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-1	BOP-77i-0820	Total/NA	Water	RSK-175	
410-10882-2	BOP-73i-0820	Total/NA	Water	RSK-175	
410-10882-3	BOP-76i-0820	Total/NA	Water	RSK-175	
MB 410-33918/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-33918/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-33918/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 34044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-1	BOP-77i-0820	Total/NA	Water	RSK-175	33918
410-10882-2	BOP-73i-0820	Total/NA	Water	RSK-175	33918
410-10882-3	BOP-76i-0820	Total/NA	Water	RSK-175	33918
MB 410-33918/1-A	Method Blank	Total/NA	Water	RSK-175	33918
LCS 410-33918/2-A	Lab Control Sample	Total/NA	Water	RSK-175	33918
LCSD 410-33918/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	33918

Prep Batch: 34365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-1 - DL	BOP-77i-0820	Total/NA	Water	RSK-175	
410-10882-2 - DL	BOP-73i-0820	Total/NA	Water	RSK-175	

GC VOA (Continued)

Prep Batch: 34365 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-3 - RA	BOP-76i-0820	Total/NA	Water	RSK-175	
410-10882-3 - DL	BOP-76i-0820	Total/NA	Water	RSK-175	
MB 410-34365/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-34365/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-34365/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 34380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-1 - DL	BOP-77i-0820	Total/NA	Water	RSK-175	34365
410-10882-2 - DL	BOP-73i-0820	Total/NA	Water	RSK-175	34365
410-10882-3 - RA	BOP-76i-0820	Total/NA	Water	RSK-175	34365
410-10882-3 - DL	BOP-76i-0820	Total/NA	Water	RSK-175	34365
MB 410-34365/1-A	Method Blank	Total/NA	Water	RSK-175	34365
LCS 410-34365/2-A	Lab Control Sample	Total/NA	Water	RSK-175	34365
LCSD 410-34365/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	34365

HPLC/IC

Analysis Batch: 34311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-1	BOP-77i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10882-2	BOP-73i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10882-3	BOP-76i-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-34311/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-34311/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 34312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-1	BOP-77i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10882-2	BOP-73i-0820	Total/NA	Water	EPA 300.0 R2.1	
410-10882-3	BOP-76i-0820	Total/NA	Water	EPA 300.0 R2.1	
MB 410-34312/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-34312/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 34216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-2	BOP-73i-0820	Total Recoverable	Water	3005A	
MB 410-34216/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-34216/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 34250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-2	BOP-73i-0820	Dissolved	Water	Non-Digest Prep	
MB 410-34250/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-34250/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Prep Batch: 34704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-1	BOP-77i-0820	Total Recoverable	Water	3005A	
410-10882-3	BOP-76i-0820	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 34704 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-34704/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-34704/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
410-10882-1 MS	BOP-77i-0820	Total Recoverable	Water	3005A	
410-10882-1 MSD	BOP-77i-0820	Total Recoverable	Water	3005A	
410-10882-1 DU	BOP-77i-0820	Total Recoverable	Water	3005A	

Analysis Batch: 34967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-2	BOP-73i-0820	Total Recoverable	Water	6010D	34216
MB 410-34216/1-A	Method Blank	Total Recoverable	Water	6010D	34216
LCS 410-34216/2-A	Lab Control Sample	Total Recoverable	Water	6010D	34216

Analysis Batch: 37096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-34704/1-A	Method Blank	Total Recoverable	Water	6010D	34704
LCS 410-34704/2-A	Lab Control Sample	Total Recoverable	Water	6010D	34704
410-10882-1 MS	BOP-77i-0820	Total Recoverable	Water	6010D	34704
410-10882-1 MSD	BOP-77i-0820	Total Recoverable	Water	6010D	34704
410-10882-1 DU	BOP-77i-0820	Total Recoverable	Water	6010D	34704

Analysis Batch: 37472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-2	BOP-73i-0820	Dissolved	Water	6010D	34250
MB 410-34250/1-A	Method Blank	Total/NA	Water	6010D	34250
LCS 410-34250/2-A	Lab Control Sample	Total/NA	Water	6010D	34250

Analysis Batch: 38214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-1	BOP-77i-0820	Total Recoverable	Water	6010D	34704
410-10882-3	BOP-76i-0820	Total Recoverable	Water	6010D	34704
MB 410-34704/1-A	Method Blank	Total Recoverable	Water	6010D	34704
LCS 410-34704/2-A	Lab Control Sample	Total Recoverable	Water	6010D	34704
410-10882-1 MS	BOP-77i-0820	Total Recoverable	Water	6010D	34704
410-10882-1 MSD	BOP-77i-0820	Total Recoverable	Water	6010D	34704
410-10882-1 DU	BOP-77i-0820	Total Recoverable	Water	6010D	34704

Prep Batch: 39037

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-3	BOP-76i-0820	Dissolved	Water	Non-Digest Prep	
MB 410-39037/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-39037/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Analysis Batch: 39455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-3	BOP-76i-0820	Dissolved	Water	6010D	39037
MB 410-39037/1-A	Method Blank	Total/NA	Water	6010D	39037
LCS 410-39037/2-A	Lab Control Sample	Total/NA	Water	6010D	39037

Prep Batch: 39482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-1	BOP-77i-0820	Dissolved	Water	Non-Digest Prep	

Metals (Continued)

Prep Batch: 39482 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-39482/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-39482/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Analysis Batch: 39905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-1	BOP-77i-0820	Dissolved	Water	6010D	39482
MB 410-39482/1-A	Method Blank	Total/NA	Water	6010D	39482
LCS 410-39482/2-A	Lab Control Sample	Total/NA	Water	6010D	39482

General Chemistry

Analysis Batch: 35808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10882-1	BOP-77i-0820	Total/NA	Water	5310C-2011	
410-10882-2	BOP-73i-0820	Total/NA	Water	5310C-2011	
410-10882-3	BOP-76i-0820	Total/NA	Water	5310C-2011	
MB 410-35808/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-35808/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Client Sample ID: BOP-77i-0820

Lab Sample ID: 410-10882-1

Date Collected: 08/14/20 09:15

Matrix: Water

Date Received: 08/15/20 09:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 19:16	K4WN	ELLE
Total/NA	Prep	RSK-175			33918	08/17/20 09:28	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	34044	08/17/20 20:10	IYN5	ELLE
Total/NA	Prep	RSK-175	DL		34365	08/18/20 08:32	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	50	34380	08/18/20 11:48	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	34312	08/18/20 12:25	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		50	34311	08/18/20 12:42	GJ35	ELLE
Dissolved	Prep	Non-Digest Prep			39482	09/01/20 05:34	UJL8	ELLE
Dissolved	Analysis	6010D		5	39905	09/01/20 18:39	UCIG	ELLE
Total Recoverable	Prep	3005A			34704	08/19/20 03:42	UJL8	ELLE
Total Recoverable	Analysis	6010D		5	38214	08/27/20 19:26	UCIG	ELLE
Total/NA	Analysis	5310C-2011		500	35808	08/20/20 18:14	KGQ6	ELLE

Client Sample ID: BOP-73i-0820

Lab Sample ID: 410-10882-2

Date Collected: 08/14/20 10:15

Matrix: Water

Date Received: 08/15/20 09:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL	DL	20	36866	08/25/20 12:50	K4WN	ELLE
Total/NA	Analysis	8260C LL		5	37329	08/26/20 19:37	K4WN	ELLE
Total/NA	Prep	RSK-175			33918	08/17/20 09:28	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	34044	08/17/20 20:29	IYN5	ELLE
Total/NA	Prep	RSK-175	DL		34365	08/18/20 08:32	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	50	34380	08/18/20 12:07	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	34311	08/18/20 12:59	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	34312	08/18/20 12:59	GJ35	ELLE
Dissolved	Prep	Non-Digest Prep			34250	08/18/20 06:22	UJL8	ELLE
Dissolved	Analysis	6010D		1	37472	08/26/20 09:17	ULJC	ELLE
Total Recoverable	Prep	3005A			34216	08/18/20 03:05	UJL8	ELLE
Total Recoverable	Analysis	6010D		1	34967	08/19/20 13:24	UCIG	ELLE
Total/NA	Analysis	5310C-2011		50	35808	08/20/20 18:27	KGQ6	ELLE

Client Sample ID: BOP-76i-0820

Lab Sample ID: 410-10882-3

Date Collected: 08/14/20 10:58

Matrix: Water

Date Received: 08/15/20 09:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 18:13	K4WN	ELLE
Total/NA	Analysis	8260C LL	DL	10	37329	08/26/20 18:12	K4WN	ELLE
Total/NA	Prep	RSK-175			33918	08/17/20 09:28	IYN5	ELLE
Total/NA	Analysis	RSK-175		1	34044	08/17/20 20:48	IYN5	ELLE
Total/NA	Prep	RSK-175	RA		34365	08/18/20 08:32	IYN5	ELLE
Total/NA	Analysis	RSK-175	RA	1	34380	08/18/20 12:45	LXF2	ELLE

Lab Chronicle

Client: Landau & Associates, Inc.
Job ID: 410-10882-1
Project/Site: Boeing Portland/00251116.120.412

Client Sample ID: BOP-76i-0820
Lab Sample ID: 410-10882-3

Date Collected: 08/14/20 10:58
Matrix: Water
Date Received: 08/15/20 09:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	RSK-175	DL		34365	08/18/20 08:32	IYN5	ELLE
Total/NA	Analysis	RSK-175	DL	50	34380	08/18/20 13:03	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	34311	08/18/20 13:16	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	34312	08/18/20 13:16	GJ35	ELLE
Dissolved	Prep	Non-Digest Prep			39037	08/31/20 04:56	UJL8	ELLE
Dissolved	Analysis	6010D		5	39455	08/31/20 21:26	UCIG	ELLE
Total Recoverable	Prep	3005A			34704	08/19/20 03:42	UJL8	ELLE
Total Recoverable	Analysis	6010D		5	38214	08/27/20 20:21	UCIG	ELLE
Total/NA	Analysis	5310C-2011		500	35808	08/20/20 18:41	KGQ6	ELLE

Client Sample ID: Trip Blanks
Lab Sample ID: 410-10882-4

Date Collected: 08/14/20 00:00
Matrix: Water
Date Received: 08/15/20 09:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	36419	08/24/20 13:16	K4WN	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: 410-10882-1
Project/Site: Boeing Portland/00251116.120.412

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
5310C-2011		Water	Total Organic Carbon
6010D	3005A	Water	Iron
6010D	Non-Digest Prep	Water	Iron
8260C LL		Water	1,1,1-Trichloroethane
8260C LL		Water	1,1,2,2-Tetrachloroethane
8260C LL		Water	1,1,2-Trichloroethane
8260C LL		Water	1,1-Dichloroethane
8260C LL		Water	1,1-Dichloroethene
8260C LL		Water	1,2-Dichloroethane
8260C LL		Water	1,2-Dichloropropane
8260C LL		Water	2-Butanone
8260C LL		Water	2-Hexanone
8260C LL		Water	4-Methyl-2-pentanone
8260C LL		Water	Acetone
8260C LL		Water	Benzene
8260C LL		Water	Bromodichloromethane
8260C LL		Water	Bromoform
8260C LL		Water	Bromomethane
8260C LL		Water	Carbon disulfide
8260C LL		Water	Carbon tetrachloride
8260C LL		Water	Chlorobenzene
8260C LL		Water	Chloroethane
8260C LL		Water	Chloroform
8260C LL		Water	Chloromethane
8260C LL		Water	cis-1,2-Dichloroethene
8260C LL		Water	cis-1,3-Dichloropropene
8260C LL		Water	Dibromochloromethane
8260C LL		Water	Ethylbenzene
8260C LL		Water	Freon 113
8260C LL		Water	m&p-Xylene
8260C LL		Water	Methylene Chloride
8260C LL		Water	o-Xylene
8260C LL		Water	Styrene
8260C LL		Water	Tetrachloroethene
8260C LL		Water	Toluene
8260C LL		Water	trans-1,2-Dichloroethene
8260C LL		Water	trans-1,3-Dichloropropene
8260C LL		Water	Trichloroethene
8260C LL		Water	Trichlorofluoromethane
8260C LL		Water	Vinyl acetate
8260C LL		Water	Vinyl chloride
EPA 300.0 R2.1		Water	Nitrogen, Nitrate
EPA 300.0 R2.1		Water	Sulfate
RSK-175	RSK-175	Water	Ethane (1C)
RSK-175	RSK-175	Water	Ethene (1C)

Accreditation/Certification Summary

Client: Landau & Associates, Inc. Job ID: 410-10882-1
Project/Site: Boeing Portland/00251116.120.412

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-21
RSK-175	RSK-175	Water	Methane (1C)

Method Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland/00251116.120.412

Job ID: 410-10882-1

Method	Method Description	Protocol	Laboratory
8260C LL	Volatile Organic Compounds by GC/MS	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010D	Metals (ICP)	SW846	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique , RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

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: 410-10882-1
Project/Site: Boeing Portland/00251116.120.412

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-10882-1	BOP-77i-0820	Water	08/14/20 09:15	08/15/20 09:54	
410-10882-2	BOP-73i-0820	Water	08/14/20 10:15	08/15/20 09:54	
410-10882-3	BOP-76i-0820	Water	08/14/20 10:58	08/15/20 09:54	
410-10882-4	Trip Blanks	Water	08/14/20 00:00	08/15/20 09:54	

Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____ For Eurofins Lancaster Laboratories Environmenta
Group # _____ Sample # _____
Please print. Instructions on reverse side correspond.

410-10882 Chain of Custody

(1) Client Information

Site Location: Gresham, Oregon
Site Project: Boeing of Portland
Site Program/#: 007116.120.417
Boeing PM: Debbie Taege
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: [X] Boeing EHS [ ] Other (specify): _____
Sampler: WHLRGN # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) VOC (38 List)	TOC	Sulfate	Nitrate	Total Iron	Dissolved Iron	AMEE	(5) Remarks/Comments
Bop-77-0820	08/14/20	0913	H2O	11	X	X	X	X	X	X	X	
Bop-73-0820	08/14/20	1011	H2O	11	X	X	X	X	X	X	X	
Bop-76-0820	08/14/20	1058	H2O	11	X	X	X	X	X	X	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
Greg Mottl	08/14/20 1230		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
			8/15/20 9:54

Relinquished by commercial carrier (circle): UPS FedEx Other: _____
Temperature upon Receipt: 5.1 °C
Custody Seals Intact?: Yes No

(7)

JR

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.

KJ

9/4/2020

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 410-10882-1

Login Number: 10882

List Source: Eurofins Lancaster Laboratories Env

List Number: 1

Creator: Rivera-Santa, Julissa

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.	N/A	
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.	True	
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	

eurofins | Environment Testing America



ANALYTICAL REPORT

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

Laboratory Job ID: 410-13139-1
Client Project/Site: Boeing Portland/0025116.120.412

For:
Landau & Associates, Inc.
Sound View Plaza, 130 2nd Ave S
Edmonds, Washington 98020-9129

Attn: Chris Kimmel

Authorized for release by:
9/14/2020 3:10:11 PM

Kay Hower, Principal Project Manager
(717)556-7364
kayhower@eurofinsus.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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 recoveries that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result.

* 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 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. 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 LANACASTER 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. 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.



Kay Hower
Principal Project Manager
9/14/2020 3:10:11 PM

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Detection Summary 6
Client Sample Results 7
Surrogate Summary 9
QC Sample Results 10
QC Association Summary 14
Lab Chronicle 15
Certification Summary 16
Method Summary 17
Sample Summary 18
Chain of Custody 19
Receipt Checklists 20

Definitions/Glossary

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland/0025116.120.412

Job ID: 410-13139-1

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: 410-13139-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-13139-1

Receipt
The samples were received on 9/4/2020 10:53 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 18.8º C.

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

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

Detection Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland/0025116.120.412

Job ID: 410-13139-1

Client Sample ID: D-08i-0920 — Lab Sample ID: 410-13139-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.214		0.200		ug/L	1		8260C LL	Total/NA
Acetone	42.3		5.00		ug/L	1		8260C LL	Total/NA
Chloroform	0.376		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	1.40		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 410-13139-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: D-08i-0920

Date Collected: 09/01/20 11:20
Date Received: 09/04/20 10:53

Lab Sample ID: 410-13139-1

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			09/12/20 00:45	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			09/12/20 00:45	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			09/12/20 00:45	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			09/12/20 00:45	1
1,1-Dichloroethene	**0.214**		0.200		ug/L			09/12/20 00:45	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			09/12/20 00:45	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			09/12/20 00:45	1
2-Butanone	5.00	U	5.00		ug/L			09/12/20 00:45	1
2-Hexanone	5.00	U	5.00		ug/L			09/12/20 00:45	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			09/12/20 00:45	1
Acetone	**42.3**		5.00		ug/L			09/12/20 00:45	1
Benzene	0.200	U	0.200		ug/L			09/12/20 00:45	1
Bromodichloromethane	0.500	U	0.500		ug/L			09/12/20 00:45	1
Bromoform	1.00	U	1.00		ug/L			09/12/20 00:45	1
Bromomethane	0.500	U	0.500		ug/L			09/12/20 00:45	1
Carbon disulfide	0.500	U	0.500		ug/L			09/12/20 00:45	1
Carbon tetrachloride	0.200	U	0.200		ug/L			09/12/20 00:45	1
Chlorobenzene	0.500	U	0.500		ug/L			09/12/20 00:45	1
Chloroethane	0.500	U	0.500		ug/L			09/12/20 00:45	1
Chloroform	**0.376**		0.200		ug/L			09/12/20 00:45	1
Chloromethane	0.500	U	0.500		ug/L			09/12/20 00:45	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			09/12/20 00:45	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			09/12/20 00:45	1
Dibromochloromethane	0.500	U	0.500		ug/L			09/12/20 00:45	1
Ethylbenzene	0.500	U	0.500		ug/L			09/12/20 00:45	1
Freon 113	0.500	U	0.500		ug/L			09/12/20 00:45	1
m&p-Xylene	0.500	U	0.500		ug/L			09/12/20 00:45	1
Methylene Chloride	0.500	U	0.500		ug/L			09/12/20 00:45	1
o-Xylene	0.500	U	0.500		ug/L			09/12/20 00:45	1
Styrene	0.500	U	0.500		ug/L			09/12/20 00:45	1
Tetrachloroethene	0.200	U	0.200		ug/L			09/12/20 00:45	1
Toluene	0.200	U	0.200		ug/L			09/12/20 00:45	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			09/12/20 00:45	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			09/12/20 00:45	1
Trichloroethene	**1.40**		0.200		ug/L			09/12/20 00:45	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			09/12/20 00:45	1
Vinyl acetate	0.500	U	0.500		ug/L			09/12/20 00:45	1
Vinyl chloride	0.200	U	0.200		ug/L			09/12/20 00:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*09/12/20 00:45*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*09/12/20 00:45*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*09/12/20 00:45*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*09/12/20 00:45*	*1*

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland/0025116.120.412

Job ID: 410-13139-1

Client Sample ID: Trip Blank

Date Collected: 09/01/20 00:00
Date Received: 09/04/20 10:53

Lab Sample ID: 410-13139-2

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			09/12/20 00:23	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			09/12/20 00:23	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			09/12/20 00:23	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			09/12/20 00:23	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			09/12/20 00:23	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			09/12/20 00:23	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			09/12/20 00:23	1
2-Butanone	5.00	U	5.00		ug/L			09/12/20 00:23	1
2-Hexanone	5.00	U	5.00		ug/L			09/12/20 00:23	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			09/12/20 00:23	1
Acetone	5.00	U	5.00		ug/L			09/12/20 00:23	1
Benzene	0.200	U	0.200		ug/L			09/12/20 00:23	1
Bromodichloromethane	0.500	U	0.500		ug/L			09/12/20 00:23	1
Bromoform	1.00	U	1.00		ug/L			09/12/20 00:23	1
Bromomethane	0.500	U	0.500		ug/L			09/12/20 00:23	1
Carbon disulfide	0.500	U	0.500		ug/L			09/12/20 00:23	1
Carbon tetrachloride	0.200	U	0.200		ug/L			09/12/20 00:23	1
Chlorobenzene	0.500	U	0.500		ug/L			09/12/20 00:23	1
Chloroethane	0.500	U	0.500		ug/L			09/12/20 00:23	1
Chloroform	0.200	U	0.200		ug/L			09/12/20 00:23	1
Chloromethane	0.500	U	0.500		ug/L			09/12/20 00:23	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			09/12/20 00:23	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			09/12/20 00:23	1
Dibromochloromethane	0.500	U	0.500		ug/L			09/12/20 00:23	1
Ethylbenzene	0.500	U	0.500		ug/L			09/12/20 00:23	1
Freon 113	0.500	U	0.500		ug/L			09/12/20 00:23	1
m&p-Xylene	0.500	U	0.500		ug/L			09/12/20 00:23	1
Methylene Chloride	0.500	U	0.500		ug/L			09/12/20 00:23	1
o-Xylene	0.500	U	0.500		ug/L			09/12/20 00:23	1
Styrene	0.500	U	0.500		ug/L			09/12/20 00:23	1
Tetrachloroethene	0.200	U	0.200		ug/L			09/12/20 00:23	1
Toluene	0.200	U	0.200		ug/L			09/12/20 00:23	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			09/12/20 00:23	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			09/12/20 00:23	1
Trichloroethene	0.200	U	0.200		ug/L			09/12/20 00:23	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			09/12/20 00:23	1
Vinyl acetate	0.500	U	0.500		ug/L			09/12/20 00:23	1
Vinyl chloride	0.200	U	0.200		ug/L			09/12/20 00:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*09/12/20 00:23*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*09/12/20 00:23*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*09/12/20 00:23*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*09/12/20 00:23*	*1*

Surrogate Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland/0025116.120.412

Job ID: 410-13139-1

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)
410-13139-1	D-08i-0920	98	97	102	106
410-13139-2	Trip Blank	101	97	101	106
LCS 410-43093/5	Lab Control Sample	101	99	100	99
LCS 410-43093/7	Lab Control Sample	103	99	98	100
LCSD 410-43093/6	Lab Control Sample Dup	99	99	100	101
LCSD 410-43093/8	Lab Control Sample Dup	99	97	99	102
MB 410-43093/9	Method Blank	98	98	102	105

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 410-43093/9
Matrix: Water
Analysis Batch: 43093

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			09/11/20 20:23	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			09/11/20 20:23	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			09/11/20 20:23	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			09/11/20 20:23	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			09/11/20 20:23	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			09/11/20 20:23	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			09/11/20 20:23	1
2-Butanone	5.00	U	5.00		ug/L			09/11/20 20:23	1
2-Hexanone	5.00	U	5.00		ug/L			09/11/20 20:23	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			09/11/20 20:23	1
Acetone	5.00	U	5.00		ug/L			09/11/20 20:23	1
Benzene	0.200	U	0.200		ug/L			09/11/20 20:23	1
Bromodichloromethane	0.500	U	0.500		ug/L			09/11/20 20:23	1
Bromoform	1.00	U	1.00		ug/L			09/11/20 20:23	1
Bromomethane	0.500	U	0.500		ug/L			09/11/20 20:23	1
Carbon disulfide	0.500	U	0.500		ug/L			09/11/20 20:23	1
Carbon tetrachloride	0.200	U	0.200		ug/L			09/11/20 20:23	1
Chlorobenzene	0.500	U	0.500		ug/L			09/11/20 20:23	1
Chloroethane	0.500	U	0.500		ug/L			09/11/20 20:23	1
Chloroform	0.200	U	0.200		ug/L			09/11/20 20:23	1
Chloromethane	0.500	U	0.500		ug/L			09/11/20 20:23	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			09/11/20 20:23	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			09/11/20 20:23	1
Dibromochloromethane	0.500	U	0.500		ug/L			09/11/20 20:23	1
Ethylbenzene	0.500	U	0.500		ug/L			09/11/20 20:23	1
Freon 113	0.500	U	0.500		ug/L			09/11/20 20:23	1
m&p-Xylene	0.500	U	0.500		ug/L			09/11/20 20:23	1
Methylene Chloride	0.500	U	0.500		ug/L			09/11/20 20:23	1
o-Xylene	0.500	U	0.500		ug/L			09/11/20 20:23	1
Styrene	0.500	U	0.500		ug/L			09/11/20 20:23	1
Tetrachloroethene	0.200	U	0.200		ug/L			09/11/20 20:23	1
Toluene	0.200	U	0.200		ug/L			09/11/20 20:23	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			09/11/20 20:23	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			09/11/20 20:23	1
Trichloroethene	0.200	U	0.200		ug/L			09/11/20 20:23	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			09/11/20 20:23	1
Vinyl acetate	0.500	U	0.500		ug/L			09/11/20 20:23	1
Vinyl chloride	0.200	U	0.200		ug/L			09/11/20 20:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*09/11/20 20:23*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*09/11/20 20:23*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*09/11/20 20:23*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*09/11/20 20:23*	*1*

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

Lab Sample ID: LCS 410-43093/5
Matrix: Water
Analysis Batch: 43093

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	4.739		ug/L		95	78 - 126
1,1,2,2-Tetrachloroethane	5.00	4.924		ug/L		98	75 - 123
1,1,2-Trichloroethane	5.00	5.191		ug/L		104	80 - 120
1,1-Dichloroethane	5.00	4.852		ug/L		97	74 - 120
1,1-Dichloroethene	5.00	4.826		ug/L		97	80 - 131
1,2-Dichloroethane	5.00	4.604		ug/L		92	69 - 122
1,2-Dichloropropane	5.00	4.860		ug/L		97	80 - 120
2-Butanone	37.5	40.49		ug/L		108	59 - 141
2-Hexanone	25.0	27.36		ug/L		109	52 - 140
4-Methyl-2-pentanone	25.0	27.21		ug/L		109	55 - 140
Acetone	37.5	34.41		ug/L		92	60 - 146
Benzene	5.00	4.788		ug/L		96	80 - 120
Bromodichloromethane	5.00	5.058		ug/L		101	73 - 124
Bromoform	5.00	4.637		ug/L		93	49 - 144
Bromomethane	5.00	5.148		ug/L		103	60 - 136
Carbon disulfide	5.00	4.393		ug/L		88	67 - 130
Carbon tetrachloride	5.00	4.893		ug/L		98	64 - 141
Chlorobenzene	5.00	5.035		ug/L		101	80 - 120
Chloroethane	5.00	5.060		ug/L		101	63 - 120
Chloroform	5.00	4.908		ug/L		98	80 - 120
Chloromethane	5.00	4.663		ug/L		93	56 - 124
cis-1,2-Dichloroethene	5.00	5.067		ug/L		101	80 - 122
cis-1,3-Dichloropropene	5.00	4.924		ug/L		98	67 - 121
Dibromochloromethane	5.00	5.331		ug/L		107	64 - 138
Ethylbenzene	5.00	5.006		ug/L		100	80 - 120
Freon 113	5.00	4.908		ug/L		98	75 - 133
m&p-Xylene	10.0	10.23		ug/L		102	80 - 120
Methylene Chloride	5.00	4.878		ug/L		98	80 - 120
o-Xylene	5.00	5.047		ug/L		101	80 - 120
Styrene	5.00	5.152		ug/L		103	80 - 120
Tetrachloroethene	5.00	5.044		ug/L		101	80 - 120
Toluene	5.00	4.895		ug/L		98	80 - 120
trans-1,2-Dichloroethene	5.00	4.702		ug/L		94	80 - 122
trans-1,3-Dichloropropene	5.00	5.010		ug/L		100	61 - 129
Trichloroethene	5.00	4.748		ug/L		95	80 - 120
Trichlorofluoromethane	5.00	5.674		ug/L		113	62 - 136
Vinyl chloride	5.00	4.976		ug/L		100	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

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

Lab Sample ID: LCS 410-43093/7
Matrix: Water
Analysis Batch: 43093

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	10.63		ug/L		85	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-43093/6
Matrix: Water
Analysis Batch: 43093

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	4.718		ug/L		94	78 - 126	0	30
1,1,2,2-Tetrachloroethane			5.00	5.024		ug/L		100	75 - 123	2	30
1,1,2-Trichloroethane			5.00	5.209		ug/L		104	80 - 120	0	30
1,1-Dichloroethane			5.00	4.763		ug/L		95	74 - 120	2	30
1,1-Dichloroethene			5.00	4.817		ug/L		96	80 - 131	0	30
1,2-Dichloroethane			5.00	4.704		ug/L		94	69 - 122	2	30
1,2-Dichloropropane			5.00	4.841		ug/L		97	80 - 120	0	30
2-Butanone			37.5	38.08		ug/L		102	59 - 141	6	30
2-Hexanone			25.0	26.04		ug/L		104	52 - 140	5	30
4-Methyl-2-pentanone			25.0	25.98		ug/L		104	55 - 140	5	30
Acetone			37.5	33.47		ug/L		89	60 - 146	3	30
Benzene			5.00	4.767		ug/L		95	80 - 120	0	30
Bromodichloromethane			5.00	5.015		ug/L		100	73 - 124	1	30
Bromoform			5.00	4.703		ug/L		94	49 - 144	1	30
Bromomethane			5.00	5.130		ug/L		103	60 - 136	0	30
Carbon disulfide			5.00	4.384		ug/L		88	67 - 130	0	30
Carbon tetrachloride			5.00	4.872		ug/L		97	64 - 141	0	30
Chlorobenzene			5.00	5.036		ug/L		101	80 - 120	0	30
Chloroethane			5.00	4.970		ug/L		99	63 - 120	2	30
Chloroform			5.00	4.839		ug/L		97	80 - 120	1	30
Chloromethane			5.00	4.635		ug/L		93	56 - 124	1	30
cis-1,2-Dichloroethene			5.00	5.019		ug/L		100	80 - 122	1	30
cis-1,3-Dichloropropene			5.00	4.830		ug/L		97	67 - 121	2	30
Dibromochloromethane			5.00	5.347		ug/L		107	64 - 138	0	30
Ethylbenzene			5.00	4.999		ug/L		100	80 - 120	0	30
Freon 113			5.00	4.957		ug/L		99	75 - 133	1	30
m&p-Xylene			10.0	10.17		ug/L		102	80 - 120	1	30
Methylene Chloride			5.00	4.881		ug/L		98	80 - 120	0	30
o-Xylene			5.00	5.005		ug/L		100	80 - 120	1	30
Styrene			5.00	5.148		ug/L		103	80 - 120	0	30
Tetrachloroethene			5.00	5.067		ug/L		101	80 - 120	0	30
Toluene			5.00	4.878		ug/L		98	80 - 120	0	30
trans-1,2-Dichloroethene			5.00	4.705		ug/L		94	80 - 122	0	30
trans-1,3-Dichloropropene			5.00	4.993		ug/L		100	61 - 129	0	30
Trichloroethene			5.00	4.711		ug/L		94	80 - 120	1	30

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

Lab Sample ID: LCSD 410-43093/6
Matrix: Water
Analysis Batch: 43093

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	5.398		ug/L		108	62 - 136	5	30
Vinyl chloride			5.00	4.970		ug/L		99	60 - 125	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-43093/8
Matrix: Water
Analysis Batch: 43093

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	10.35		ug/L		83	38 - 145	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

QC Association Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland/0025116.120.412

Job ID: 410-13139-1

GC/MS VOA

Analysis Batch: 43093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-13139-1	D-08i-0920	Total/NA	Water	8260C LL	
410-13139-2	Trip Blank	Total/NA	Water	8260C LL	
MB 410-43093/9	Method Blank	Total/NA	Water	8260C LL	
LCS 410-43093/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-43093/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-43093/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-43093/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland/0025116.120.412

Job ID: 410-13139-1

Client Sample ID: D-08i-0920

Lab Sample ID: 410-13139-1

Date Collected: 09/01/20 11:20

Matrix: Water

Date Received: 09/04/20 10:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	43093	09/12/20 00:45	K4WN	ELLE

Client Sample ID: Trip Blank

Lab Sample ID: 410-13139-2

Date Collected: 09/01/20 00:00

Matrix: Water

Date Received: 09/04/20 10:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	43093	09/12/20 00:23	K4WN	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.
Project/Site: Boeing Portland/0025116.120.412

Job ID: 410-13139-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

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

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	1.01	11-30-20
Alaska	State	PA00009	06-30-21
Alaska (UST)	State	17-027	01-31-21
Arizona	State	AZ0780	03-12-21
Arkansas DEQ	State	19-053-0	08-09-21
California	State	2792	01-31-21
Colorado	State	PA00009	06-30-21
Connecticut	State	PH-0746	12-26-20
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	10-31-20
Delaware (DW)	State	N/A	10-31-20
Florida	NELAP	E87997	07-01-21
Hawaii	State	N/A	01-31-21
Illinois	NELAP	004559	01-31-21
Kansas	NELAP	E-10151	10-31-20
Kentucky (DW)	State	KY90088	12-31-20
Kentucky (UST)	State	1.01	11-30-20
Kentucky (WW)	State	KY90088	12-31-20
Louisiana	NELAP	02055	06-30-21
Maine	State	2019012	03-12-21
Maryland	State	100	09-30-20
Massachusetts	State	M-PA009	06-30-21
Michigan	State	9930	01-31-21
Missouri	State	450	01-31-22
Montana (DW)	State	0098	12-31-20
Nebraska	State	NE-OS-32-17	01-31-20 *
New Hampshire	NELAP	273019	01-10-21
New Jersey	NELAP	PA011	06-30-21
New York	NELAP	10670	04-01-21
North Carolina (WW/SW)	State	521	12-31-20
North Dakota	State	R-205	01-31-20 *
Oklahoma	NELAP	R-205	02-01-21
PALA	Canada	1978	05-08-21
Pennsylvania	NELAP	36-00037	01-31-21
Rhode Island	State	LAO00338	12-30-20
South Carolina	State	89002002	01-31-21
Tennessee	State	02838	01-31-21
Texas	NELAP	T104704194-20-38	08-31-21
Utah	NELAP	PA000092019-16	02-28-21
Vermont	State	VT - 36037	10-28-20
Virginia	NELAP	10561	06-14-21
Washington	State	C457	04-11-21
West Virginia (DW)	State	9906 C	12-31-20
West Virginia DEP	State	055	09-30-20
Wyoming	State	8TMS-L	01-07-21
Wyoming (UST)	A2LA	1.01	11-30-20

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

Method Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland/0025116.120.412

Job ID: 410-13139-1

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.
Project/Site: Boeing Portland/0025116.120.412

Job ID: 410-13139-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-13139-1	D-08i-0920	Water	09/01/20 11:20	09/04/20 10:53	
410-13139-2	Trip Blank	Water	09/01/20 00:00	09/04/20 10:53	

[redacted]

eurofins | Lancaster Laboratories Environmental

Acct. # _____ For Euro Grou

410-13139 Chain of Custody

boeing Chain of Custody

1 Client Information

Site Location: Gresham, Oregon
Site Project: Boeing, Portland
Site Program/#: 0025116.120.412
Boeing PM: Debbie Taege
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL # of Coolers: 1

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	4 VOC (38 list)	5 Remarks/Comments
D-08i-0920	9/11/20	11:20	H_2O	4	X	
Trip Blank	—	—	H_2O	1	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 7
W. Hayes Lyon	9/11/20 13:00		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time 9/14/2020 1053

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

Temperature upon Receipt: 18.1 °C

Custody Seals Intact?: (Yes) No

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: 410-13139-1

Login Number: 13139
List Number: 1
Creator: Jeremiah, Cory T

List Source: Eurofins Lancaster Laboratories Env

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.	True	
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	

Fourth Quarter 2020

Technical Memorandum

TO: Evelyn Ives, Project Manager

FROM: Kristi Schultz and Danielle Jorgensen

DATE: January 11, 2021

RE: **Boeing Portland Troutdale Gravel Aquifer (TGA)**
Fourth Quarter 2020 Groundwater Quality Sampling
Laboratory Data Quality Evaluation

This technical memorandum provides the results of a focused data validation associated with 26 groundwater samples, 3 field duplicates, and 6 trip blanks collected during the fourth quarter 2020 TGA sampling event at Boeing Portland. Samples were analyzed by Eurofins Lancaster Laboratories Environmental (ELLE), located in Lancaster, Pennsylvania. This data quality evaluation covers ELLE data packages 410-19551-1, 410-19569-1, 410-19766-1, 410-19949-1, and 410-19950-1. Samples submitted to ELLE were analyzed for volatile organic compounds ([VOCs], US Environmental Protection Agency [EPA] Method SW8260C); conventional inorganic parameters including N-Nitrate, N-Nitrite, and sulfate (EPA Method 300.0); total and dissolved iron (EPA Method 6010C); N-Ammonia (Method SM 4500 NH3D-2011); total organic carbon (Method SM 5310 C-2011); diesel- and motor oil-range petroleum hydrocarbons (Oregon Department of Environmental Quality [ODEQ]-approved Method NWTPH-Dx); and methane, ethane, ethane, and acetylene (MEEA; Modified RSK 175).

The verification and validation check was conducted with guidance from applicable portions of EPA's *National Functional Guidelines for Organic Data Review* (EPA 2016b) and the *National Functional Guidelines for Inorganic Data Review* (EPA 2016a). Landau Associates, Inc. (LAI) performed an EPA-equivalent Level IIA verification and validation check on each laboratory data package, which included the following:

- Verification that the laboratory data package contained all necessary documentation (including chain-of-custody record (COCs); identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at the laboratory; date and time of sample analysis; explanation of any significant corrective actions taken by the laboratory during the analytical process; and, if applicable, date of extraction, definition of laboratory data qualifiers, all sample-related quality control data, and quality control acceptance criteria).
- Verification that all requested analyses, special cleanups, and special handling methods were performed.
- Evaluation of sample holding times.
- Evaluation of quality control data compared to acceptance criteria, including method blanks, surrogate recoveries, matrix spike results, laboratory duplicate and/or replicate results, and laboratory control sample results.
- Evaluation of overall data quality and completeness of analytical data.

Data validation qualifiers are added to the sample results, as appropriate, based on the verification and validation check. The absence of a data qualifier indicates that the reported result is acceptable

without qualification. The data quality evaluation is summarized below. Data qualifiers are summarized in Table 1.

Chain-of-Custody Records

A signed COC record was attached to the data packages. The laboratory received all samples in good condition. All analyses were performed as requested, with the following exceptions:

- The laboratory noted in the case narrative for data package 410-19766-1 that the sample vial used for the VOC analysis of sample BOP-74i-1120 contained headspace. All associated reported sample results were qualified as estimated (J, UJ), as indicated in Table 1.
- The laboratory noted in the case narrative for data package 410-19766-1 that the TOC samples for BOP-76i-1120, BOP-77i-1120, and BOP-88i-1120 were received with a pH >2; the laboratory correctly adjusted the pH upon receipt. No qualification of the data was necessary.
- The laboratory noted in the case narrative for data package 410-19766-1 that the total and dissolved metals samples for BOP-88i-1120 were insufficiently preserved (pH = 7), and the laboratory was unable to adjust the preservation. The associated results are considered estimated (J, UJ), as indicated in Table 1.
- The laboratory noted in the case narrative for data package 410-19949-1 that the sample vial used for the VOC analysis of sample LAI-8-1120 contained headspace. All associated reported sample results were qualified as estimated (J, UJ), as indicated in Table 1.
- The laboratory noted in the case narrative for data package 410-19950-1 that the sample vials used for the VOC analysis of samples BOP-10i-1120 and E-7-1120 contained headspace. All associated reported sample results were qualified as estimated (J, UJ), as indicated in Table 1.
- The laboratory noted in the case narrative for data package 410-19950-1 that the TOC sample for E-7-1120 was received with a pH >2; after adding the maximum amount of preservative, the sample pH remained at 6. The associated sample result was qualified as estimated (J, UJ), as indicated in Table 1.

No special cleanups or handling methods were requested.

Upon receipt by LLI, the sample container information was compared to the associated chain-of-custody and the cooler temperatures were recorded. The coolers were received with temperatures within the EPA-recommended limit of ≤6°C, with the following exception:

- One cooler associated with laboratory data package 410-19950-1 was received with a cooler temperature of -0.9°C, which is outside the EPA-recommended limits. However, the samples were not frozen upon receipt; therefore, no qualification of the data was determined necessary.

Holding Times

For all analyses and all samples, the time between sample collection, extraction (if applicable), and analysis was determined to be within EPA- and project-specified holding times, with the following, exceptions:

- Per the data package 410-19569-1 case narrative, several samples were analyzed for nitrate outside the method-recommended hold time due to analyst error. The associated results were qualified as estimated (J, UJ), as indicated in Table 1.
- Per the data package 410-19766-1 case narrative, several samples were received outside the method-recommended pH requirements. The associated reported results were qualified as estimated (J, UJ), as indicated in Table 1.
- Per the data package 410-19766-1 case narrative, samples BOP-72i-1120 and BOP-75i-1120 were analyzed for nitrate outside the method-recommended hold time. The associated results were qualified as estimated (J, UJ), as indicated in Table 1.
- Per the data package 410-19766-1 case narrative, sample BOP-73i-1120 was initially analyzed for nitrate within the method-recommended hold time. However, the analysis was conducted at the incorrect dilution factor. The sample was reanalyzed outside the method-recommended hold time at the correct dilution factor. The original result was qualified as "do not report" (DNR), and the reanalysis result was qualified as estimated (J), as indicated in Table 1.
- Per the data package 410-19766-1 case narrative, sample BOP-76i-1120 was initially analyzed for nitrate outside the method-recommended hold time. However, the analysis was conducted at the incorrect dilution factor. The sample was reanalyzed outside the method-recommended hold time at the correct dilution factor. The reanalysis result was qualified as "do not report" (DNR) and the original result was qualified as estimated (J, UJ), as indicated in Table 1.
- Per the data package 410-19766-1 case narrative, sample BOP-77i-1120 was initially analyzed for nitrate outside the method-recommended hold time at the incorrect dilution factor. The sample was reanalyzed outside the method-recommended hold time at the correct dilution factor. The original result was qualified as "do not report" (DNR), and the reanalysis result was qualified as estimated (J), as indicated in Table 1.
- Per the data package 410-19949-1 case narrative, sample LAI-8-1120 was analyzed for nitrate outside the method-recommended hold time. The associated sample result was qualified as estimated (J, UJ), as indicated in Table 1.
- Per the data package 410-19950-1 case narrative, preserved vials were submitted for the MEEA analysis for sample E-7-1120; however, the pH at the time of the trial 1 analysis was 5, and for the trial 2 and 3 analyses, the pH was 4. The higher pH decreased the hold time to 7 days; the sample was analyzed within the shortened hold time; no qualification of the data was necessary.
- Per the data package 410-19950-1 case narrative, preserved vials were submitted for the MEEA analysis for sample BOP-10i-1120; however, the pH at the time of the trial 1 analysis was 2. The higher pH decreased the hold time to 7 days; the sample was analyzed within the shortened hold time; no qualification of the data was necessary.

Blank Results

Laboratory Method Blanks

At least one method blank was analyzed with each batch of samples for analysis. Target analytes were not detected at concentrations greater than the reporting limits in the associated method blanks. No qualification of the data was necessary.

Field Trip Blanks and Field Equipment Blanks

Six trip blanks were submitted to the laboratory for VOC analysis with the sample batches. Target analytes were not detected at concentrations greater than the reporting limits in the trip blanks. No qualification of the data was necessary.

No field equipment blanks were submitted for analysis with these sample batches.

Surrogate Recoveries

Appropriate compounds were used as surrogate spikes for the organics analyses. Recovery values for the surrogate spikes were within the current laboratory-specified control limits for all project samples, with the following exceptions:

- Recoveries of the surrogate propene associated with the MEEA initial and reanalyses of samples BOP-88i-1120 in data package 410-19766-1 and E-7-1120 in data package 410-19950-1 were greater than the laboratory-specified control limits. The reanalysis results were qualified as "do not report" (DNR), as indicated in Table 1. The reported detections from the initial analysis were qualified as estimated (J), as indicated in Table 1.
- Recovery of the surrogate o-terphenyl associated with the diesel- and motor oil-range petroleum hydrocarbons analysis of sample LAI-8-1120 in data package 410-19949-1 was greater than the laboratory-specified control limits. The associated detected concentrations were qualified as estimated (J), as indicated in Table 1.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) and Laboratory Replicate Results

At least one MS and/or laboratory replicate sample were analyzed with the conventional, diesel- and motor oil-range petroleum hydrocarbons, and/or metals parameters in data packages 410-19551-1, 410-19766-1, 410-19949-1, and 410-19950-1. The recovery values for each required spiking compound and/or the relative percent differences (RPDs) between the laboratory replicate results were within the current project-specified and/or laboratory-specified control limits for all project samples with the following exceptions:

- The MS/MSD recoveries for iron associated with the total and dissolved metals analysis of sample BOP-75i-1120 in data package 410-19766-1 were greater than the laboratory-specified control limits. The original sample concentrations were more than four times greater than the spike concentrations; therefore, no qualification of the data was necessary.

Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD) Results

At least one laboratory control sample and/or laboratory control sample duplicate (LCS/LCSD) was analyzed with each batch of samples for analysis. Recoveries and RPDs for the laboratory control samples and associated duplicates were within the current laboratory-specified control limits, with the following exceptions:

- The LCS recovery for freon 113 associated with the VOC analysis in data package 410-19551-1 was less than the laboratory-specified control limits. The associated sample results were qualified as estimated (J, UJ), as indicated in Table 1.

Blind Field Duplicate Results

As specified in the QAPP, blind field duplicate samples were collected at a rate of one blind field duplicate sample per 20 samples, but not less than one blind field duplicate per sampling round. Three pairs of blind field duplicate water samples (TowerInf-1120/TowerInD-1120, TowerEff-1120/TowerEfD-1120, and BOP-X-1120/E-4-1120) were submitted for analysis with data packages 410-19551-1 and 410-19569-1.

A project-specified control limit of 20 percent was used to evaluate the RPDs between the duplicate samples except when the sample results were within five times the reporting limit. In these cases, a project-specified control limit of plus or minus the reporting limit was used. RPDs for the duplicate sample pairs submitted for analysis were within the project-specified control limits. No qualification of the data was necessary.

Total and Dissolved Metals Concentrations

The analytical results for total and dissolved metals were compared for each project sample. A project-specified control limit of 20 percent was used to evaluate the RPDs between the total and dissolved metals results, except when the sample results were within five times the reporting limit. In these cases, a project-specified control limit of plus or minus the reporting limit was used. The RPDs between the total and dissolved metals results were within the project-specified control limits for all project samples, with the following exception:

- The RPD for total and dissolved iron for sample BOP-74i-1120 in data package 410-19766-1 was greater than 20 percent. The associated sample results were qualified as estimated (J), as indicated in Table 1.

Quantitation Limits

Project-specified quantitation limits were met for all samples except for instances where dilution was performed due to the presence of high level target species or sample matrix interference.

In those instances when an analysis result exceeded the linear range of the instrument, the laboratory appended an “E” flag to the data and reported a subsequent dilution analysis. For those samples, the “E” flagged result is qualified as “DNR” for Do Not Report, and the dilution analysis result is reported for that specific compound. For all other results, the original analysis results are reported because of the lower reporting limits, so the corresponding dilution analysis results are qualified as “DNR”.

Audit/Corrective Action Records

No corrective action records were generated for these sample batches. Based on the laboratory's case narratives, continuing calibration verification (CCV) recovery results were within laboratory-specified control limits, with the following exceptions:

- The CCV recoveries for batch 410-65414 were low for bromomethane, chloromethane, and vinyl chloride associated with the VOC analysis of multiple samples in data package 410-19551-1. The associated sample results were qualified as estimated (J, UJ), as indicated in Table 1.
- The CCV recoveries for batch 410-64920 were high for 2-hexanone and 4-methyl-2-pentanone associated with the VOC analysis in data package 410-19569-1. Detected concentrations were qualified as estimated (J), as indicated in Table 1.
- The CCV recoveries for batches 410-66213 and 410-67216 were low for bromomethane, chloromethane, chloroethane, and vinyl chloride associated with the VOC analyses in data packages 410-19569-1, 410-19766-1, 410-19949-1, and 410-19950-1. Reported results from this analytical batch were qualified as estimated (J, UJ), as indicated in Table 1.
- The CCV recoveries for batches 410-66213 and 410-67216 were high for vinyl acetate associated with the VOC analyses in data packages 410-19569-1, 410-19766-1, 410-19949-1, and 410-19950-1. Vinyl acetate was either not detected at concentrations greater than the laboratory reporting limit in the associated samples, or the results will not be reported from this analytical batch. No qualification of the data was necessary.
- The CCV recoveries for batch 410-65898 were low for bromomethane, chloroethane, chloromethane, trichlorofluoromethane, and vinyl chloride; and were high for vinyl acetate associated with the VOC analysis in data package 410-19569-1. Associated results from this analytical batch will not be reported; therefore, no qualification of the data was necessary.
- The CCV recoveries for batches 410-62985, 410-63298, and 410-64679 were high for acetylene associated with the MEEA analyses in data packages 410-19569-1, 410-19766-1, and 410-19950-1. Acetylene was not detected at concentrations greater than the laboratory reporting limit in the associated samples; therefore, no qualification of the data was necessary.
- The CCV recoveries for batch 410-66620 were low for 1,1,1-trichloroethane; 1,2-dichloroethane; and carbon tetrachloride associated with the VOC analysis in data packages 410-19766-1 and 410-19950-1. Reported results from this analytical batch were qualified as estimated (J, UJ), as indicated in Table 1.

Completeness and Overall Data Quality

The completeness for this data set is 100 percent, which meets the project-specified goal of 90 percent minimum.

Data precision was evaluated through laboratory control sample duplicates, laboratory duplicates, matrix spike duplicates, and blind field duplicates. Data accuracy was evaluated through laboratory control samples, matrix spikes, and surrogate spikes. No data were rejected.

LANDAU ASSOCIATES, INC.

Kristi Schultz
Data Specialist

Danille Jorgensen
Environmental Data Manager

DRJ/kes
[P:\025\116\FILERM\T\TGA\DATA\DV MEMOS TGA\2020\4Q20\TGA 4Q20 TM.DOCX]

Attachments

Table 1. Summary of Data Qualifiers

References

EPA. 2016a. National Functional Guidelines for Inorganic Superfund Methods Data Review. edited by Office of Superfund Remediation and Technology Innovation (OSRTI). Washington, DC: US Environmental Protection Agency.

EPA. 2016b. National Functional Guidelines for Superfund Organic Methods Data Review. edited by Office of Superfund Remediation and Technology Innovation (OSRTI). Washington, DC: US Environmental Protection Agency.

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
410-19551-1	TowerInf-1120	Bromomethane	0.500	U	UJ	Low continuing calibration recovery
410-19551-1	TowerInf-1120	Chloromethane	0.500	U	UJ	Low continuing calibration recovery
410-19551-1	TowerInf-1120	Freon 113	0.500	U	UJ	Low LCS and/or LCSD recovery
410-19551-1	TowerInf-1120	Vinyl Chloride	0.212		J	Low continuing calibration recovery
410-19551-1	TowerInD-1120	Bromomethane	0.500	U	UJ	Low continuing calibration recovery
410-19551-1	TowerInD-1120	Chloromethane	0.500	U	UJ	Low continuing calibration recovery
410-19551-1	TowerInD-1120	Freon 113	0.500	U	UJ	Low LCS and/or LCSD recovery
410-19551-1	TowerInD-1120	Vinyl Chloride	0.225		J	Low continuing calibration recovery
410-19551-1	TowerEff-1120	Bromomethane	0.500	U	UJ	Low continuing calibration recovery
410-19551-1	TowerEff-1120	Chloromethane	0.500	U	UJ	Low continuing calibration recovery
410-19551-1	TowerEff-1120	Freon 113	0.500	U	UJ	Low LCS and/or LCSD recovery
410-19551-1	TowerEff-1120	Vinyl Chloride	0.200	U	UJ	Low continuing calibration recovery
410-19551-1	TowerEfD-1120	Bromomethane	0.500	U	UJ	Low continuing calibration recovery
410-19551-1	TowerEfD-1120	Chloromethane	0.500	U	UJ	Low continuing calibration recovery
410-19551-1	TowerEfD-1120	Freon 113	0.500	U	UJ	Low LCS and/or LCSD recovery
410-19551-1	TowerEfD-1120	Vinyl Chloride	0.200	U	UJ	Low continuing calibration recovery
410-19569-1	BOP-78i-1120 (orig)	2-Butanone	559.0	E	DNR	Do not report; use reanalysis result
410-19569-1	BOP-78i-1120 (DL)	1,1,1-Trichloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	1,1,2,2-Tetrachloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	1,1,2-Trichloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	1,1-Dichloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	1,1-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	1,2-Dichloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	1,2-Dichloropropane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	2-Hexanone	50.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	4-Methyl-2-pentanone	50.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Acetone	50.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Benzene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Bromodichloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Bromoform	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Bromomethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Carbon disulfide	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Carbon tetrachloride	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Chlorobenzene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Chloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Chloroform	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Chloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	cis-1,2-Dichloroethene	5.30		DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	cis-1,3-Dichloropropene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Dibromochloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Ethylbenzene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Freon 113	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	m,p-Xylene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Methylene chloride	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	o-Xylene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Styrene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Tetrachloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Toluene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	trans-1,2-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	trans-1,3-Dichloropropene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Trichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Trichlorofluoromethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Vinyl Acetate	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-78i-1120 (DL)	Vinyl Chloride	9.62		DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (orig)	2-Butanone	462	E	DNR	Do not report; use reanalysis result
410-19569-1	BOP-79i-1120 (orig)	2-Hexanone	617	E	DNR	Do not report; use reanalysis result
410-19569-1	BOP-79i-1120 (DL)	1,1,1-Trichloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	1,1,2,2-Tetrachloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	1,1,2-Trichloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	1,1-Dichloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	1,1-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	1,2-Dichloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	1,2-Dichloropropane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	4-Methyl-2-pentanone	50.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Acetone	54.9		DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Benzene	2.00	U	DNR	Do not report; use original analysis result

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
410-19569-1	BOP-79i-1120 (DL)	Bromodichloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Bromoform	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Bromomethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Carbon disulfide	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Carbon tetrachloride	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Chlorobenzene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Chloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Chloroform	2.69		DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Chloromethane	8.17		DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	cis-1,2-Dichloroethene	2.63		DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	cis-1,3-Dichloropropene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Dibromochloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Ethylbenzene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Freon 113	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	m,p-Xylene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Methylene chloride	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	o-Xylene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Styrene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Tetrachloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Toluene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	trans-1,2-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	trans-1,3-Dichloropropene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Trichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Trichlorofluoromethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Vinyl Acetate	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-79i-1120 (DL)	Vinyl Chloride	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-84i-1120 (orig)	2-Hexanone	28.7		J	High continuing calibration recovery
410-19569-1	BOP-85i-1120 (orig)	2-Butanone	421	E	DNR	Do not report; use reanalysis result
410-19569-1	BOP-85i-1120 (orig)	2-Hexanone	86.0		J	High continuing calibration recovery
410-19569-1	BOP-85i-1120 (orig)	Chloromethane	40.0	E	DNR	Do not report; use reanalysis result
410-19569-1	BOP-85i-1120 (DL)	1,1,1-Trichloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	1,1,2,2-Tetrachloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	1,1,2-Trichloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	1,1-Dichloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	1,1-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	1,2-Dichloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	1,2-Dichloropropane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	2-Hexanone	66.7		DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	4-Methyl-2-pentanone	50.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Acetone	60.8		DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Benzene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Bromodichloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Bromoform	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Bromomethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Carbon disulfide	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Carbon tetrachloride	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Chlorobenzene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Chloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Chloroform	4.56		DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	cis-1,2-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	cis-1,3-Dichloropropene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Dibromochloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Ethylbenzene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Freon 113	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	m,p-Xylene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Methylene chloride	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	o-Xylene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Styrene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Tetrachloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Toluene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	trans-1,2-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	trans-1,3-Dichloropropene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Trichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Trichlorofluoromethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Vinyl Acetate	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-85i-1120 (DL)	Vinyl Chloride	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (orig)	2-Butanone	441	E	DNR	Do not report; use reanalysis result

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
410-19569-1	BOP-86i-1120 (orig)	2-Hexanone	24.9		J	High continuing calibration recovery
410-19569-1	BOP-86i-1120 (orig)	Chloromethane	33.1	E	DNR	Do not report; use reanalysis result
410-19569-1	BOP-86i-1120 (DL)	1,1,1-Trichloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	1,1,2,2-Tetrachloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	1,1,2-Trichloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	1,1-Dichloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	1,1-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	1,2-Dichloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	1,2-Dichloropropane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	2-Hexanone	50.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	4-Methyl-2-pentanone	50.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Acetone	50.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Benzene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Bromodichloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Bromoform	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Bromomethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Carbon disulfide	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Carbon tetrachloride	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Chlorobenzene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Chloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Chloroform	5.49		DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	cis-1,2-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	cis-1,3-Dichloropropene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Dibromochloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Ethylbenzene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Freon 113	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	m,p-Xylene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Methylene chloride	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	o-Xylene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Styrene	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Tetrachloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Toluene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	trans-1,2-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	trans-1,3-Dichloropropene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Trichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Trichlorofluoromethane	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Vinyl Acetate	5.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-86i-1120 (DL)	Vinyl Chloride	2.00	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (orig)	2-Butanone	2390	E	DNR	Do not report; use reanalysis result
410-19569-1	BOP-87i-1120 (DL)	1,1,1-Trichloroethane	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	1,1,2,2-Tetrachloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	1,1,2-Trichloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	1,1-Dichloroethane	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	1,1-Dichloroethene	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	1,2-Dichloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	1,2-Dichloropropane	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	2-Hexanone	250	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	4-Methyl-2-pentanone	250	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Acetone	250	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Benzene	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Bromodichloromethane	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Bromoform	50.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Bromomethane	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Carbon disulfide	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Carbon tetrachloride	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Chlorobenzene	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Chloroethane	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Chloroform	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Chloromethane	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	cis-1,2-Dichloroethene	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	cis-1,3-Dichloropropene	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Dibromochloromethane	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Ethylbenzene	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Freon 113	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	m,p-Xylene	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Methylene chloride	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	o-Xylene	25.0	U	DNR	Do not report; use original analysis result

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
410-19569-1	BOP-87i-1120 (DL)	Styrene	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Tetrachloroethene	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Toluene	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	trans-1,2-Dichloroethene	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	trans-1,3-Dichloropropene	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Trichloroethene	10.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Trichlorofluoromethane	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Vinyl Acetate	25.0	U	DNR	Do not report; use original analysis result
410-19569-1	BOP-87i-1120 (DL)	Vinyl Chloride	12.8		DNR	Do not report; use original analysis result
410-19569-1	E-4-1120	Nitrate (Nitrogen)	0.280	H	J	Analyzed outside hold time
410-19569-1	E-12-1120	Nitrate (Nitrogen)	0.855	H	J	Analyzed outside hold time
410-19569-1	E-13-1120	Nitrate (Nitrogen)	2.04	H	J	Analyzed outside hold time
410-19569-1	E-15-1120	Nitrate (Nitrogen)	0.100	U H	UJ	Analyzed outside hold time
410-19569-1	E-16-1120	Nitrate (Nitrogen)	0.100	U H	UJ	Analyzed outside hold time
410-19569-1	E-12-1120 (orig)	Methane	4250	E	DNR	Do not report; use reanalysis result
410-19569-1	E-12-1120 (DL)	Acetylene	100	U	DNR	Do not report; use original analysis result
410-19569-1	E-12-1120 (DL)	Ethane	100	U	DNR	Do not report; use original analysis result
410-19569-1	E-12-1120 (DL)	Ethene	100	U	DNR	Do not report; use original analysis result
410-19569-1	E-15-1120 (orig)	Methane	13100	E	DNR	Do not report; use reanalysis result
410-19569-1	E-15-1120 (DL)	Acetylene	500	U	DNR	Do not report; use original analysis result
410-19569-1	E-15-1120 (DL)	Ethane	500	U	DNR	Do not report; use original analysis result
410-19569-1	E-15-1120 (DL)	Ethene	500	U	DNR	Do not report; use original analysis result
410-19569-1	E-16-1120 (orig)	Methane	5080	E	DNR	Do not report; use reanalysis result
410-19569-1	E-16-1120 (DL)	Acetylene	250	U	DNR	Do not report; use original analysis result
410-19569-1	E-16-1120 (DL)	Ethane	250	U	DNR	Do not report; use original analysis result
410-19569-1	E-16-1120 (DL)	Ethene	250	U	DNR	Do not report; use original analysis result
410-19569-1	DP1-1120 (orig)	Methane	12100	E	DNR	Do not report; use reanalysis result
410-19569-1	DP1-1120 (DL)	Acetylene	500	U	DNR	Do not report; use original analysis result
410-19569-1	DP1-1120 (DL)	Ethane	500	U	DNR	Do not report; use original analysis result
410-19569-1	DP1-1120 (DL)	Ethene	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-72i-1120	Bromomethane	0.500	U	UJ	Low continuing calibration recovery
410-19766-1	BOP-72i-1120	Chloroethane	0.500	U	UJ	Low continuing calibration recovery
410-19766-1	BOP-72i-1120	Chloromethane	0.500	U	UJ	Low continuing calibration recovery
410-19766-1	BOP-72i-1120	Vinyl Chloride	0.200	U	UJ	Low continuing calibration recovery
410-19766-1	BOP-73i-1120 (orig)	Vinyl Chloride	34.3	E	DNR	Do not report; use reanalysis result
410-19766-1	BOP-73i-1120 (orig)	Bromomethane	0.500	U	UJ	Low continuing calibration recovery
410-19766-1	BOP-73i-1120 (orig)	Chloroethane	0.814		J	Low continuing calibration recovery
410-19766-1	BOP-73i-1120 (orig)	Chloromethane	0.500	U	UJ	Low continuing calibration recovery
410-19766-1	BOP-73i-1120 (DL)	1,1,1-Trichloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	1,1,2,2-Tetrachloroethane	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	1,1,2-Trichloroethane	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	1,1-Dichloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	1,1-Dichloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	1,2-Dichloroethane	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	1,2-Dichloropropane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	2-Butanone	100	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	2-Hexanone	100	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	4-Methyl-2-pentanone	100	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Acetone	100	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Benzene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Bromodichloromethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Bromoform	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Bromomethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Carbon disulfide	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Carbon tetrachloride	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Chlorobenzene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Chloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Chloroform	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Chloromethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	cis-1,2-Dichloroethene	16.5		DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	cis-1,3-Dichloropropene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Dibromochloromethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Ethylbenzene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Freon 113	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	m,p-Xylene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Methylene chloride	10.0	U	DNR	Do not report; use original analysis result

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
410-19766-1	BOP-73i-1120 (DL)	o-Xylene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Styrene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Tetrachloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Toluene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	trans-1,2-Dichloroethene	14.2		DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	trans-1,3-Dichloropropene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Trichloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Trichlorofluoromethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Vinyl Acetate	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Vinyl Chloride	38.1		J	Low continuing calibration recovery
410-19766-1	BOP-74i-1120 (orig)	1,1,1-Trichloroethane	0.500	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	1,1,2,2-Tetrachloroethane	0.200	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	1,1,2-Trichloroethane	0.200	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	1,1-Dichloroethane	0.500	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	1,1-Dichloroethene	0.200	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	1,2-Dichloroethane	0.200	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	1,2-Dichloropropane	0.500	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	2-Butanone	1290	E	DNR	Do not report; use reanalysis result
410-19766-1	BOP-74i-1120 (orig)	2-Hexanone	28.4		J	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	4-Methyl-2-pentanone	5.00	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Acetone	47.9		J	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Benzene	0.619		J	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Bromodichloromethane	0.500	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Bromoform	1.00	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Bromomethane	0.500	U	UJ	Headspace present in sample vial; low continuing calibration recovery
410-19766-1	BOP-74i-1120 (orig)	Carbon disulfide	0.500	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Carbon tetrachloride	0.200	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Chlorobenzene	0.500	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Chloroethane	0.500	U	UJ	Headspace present in sample vial; low continuing calibration recovery
410-19766-1	BOP-74i-1120 (orig)	Chloroform	3.81		J	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Chloromethane	7.74		J	Headspace present in sample vial; low continuing calibration recovery
410-19766-1	BOP-74i-1120 (orig)	cis-1,2-Dichloroethene	5.88		J	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	cis-1,3-Dichloropropene	0.200	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Dibromochloromethane	0.500	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Ethylbenzene	0.500	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Freon 113	0.500	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	m,p-Xylene	0.500	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Methylene chloride	0.811		J	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	o-Xylene	0.500	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Styrene	0.500	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Tetrachloroethene	0.200	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Toluene	1.21		J	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	trans-1,2-Dichloroethene	0.200	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	trans-1,3-Dichloropropene	0.200	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Trichloroethene	0.200	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Trichlorofluoromethane	0.500	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Vinyl Acetate	0.500	U	UJ	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (orig)	Vinyl Chloride	1.10		J	Headspace present in sample vial; low continuing calibration recovery
410-19766-1	BOP-74i-1120 (DL)	1,1,1-Trichloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	1,1,2,2-Tetrachloroethane	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	1,1,2-Trichloroethane	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	1,1-Dichloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	1,1-Dichloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	1,2-Dichloroethane	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	1,2-Dichloropropane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	2-Butanone	994		J	Headspace present in sample vial
410-19766-1	BOP-74i-1120 (DL)	2-Hexanone	100	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	4-Methyl-2-pentanone	100	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Acetone	100	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Benzene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Bromodichloromethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Bromoform	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Bromomethane	10.0	U	DNR	Do not report; use original analysis result

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
410-19766-1	BOP-74i-1120 (DL)	Carbon disulfide	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Carbon tetrachloride	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Chlorobenzene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Chloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Chloroform	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Chloromethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	cis-1,2-Dichloroethene	5.3		DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	cis-1,3-Dichloropropene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Dibromochloromethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Ethylbenzene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Freon 113	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	m,p-Xylene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Methylene chloride	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	o-Xylene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Styrene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Tetrachloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Toluene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	trans-1,2-Dichloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	trans-1,3-Dichloropropene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Trichloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Trichlorofluoromethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Vinyl Acetate	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Vinyl Chloride	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (orig)	2-Butanone	1660	E	DNR	Do not report; use reanalysis result
410-19766-1	BOP-75i-1120 (orig)	Bromomethane	0.500	U	UJ	Low continuing calibration recovery
410-19766-1	BOP-75i-1120 (orig)	Chloroethane	0.500	U	UJ	Low continuing calibration recovery
410-19766-1	BOP-75i-1120 (orig)	Chloromethane	0.500	U	UJ	Low continuing calibration recovery
410-19766-1	BOP-75i-1120 (orig)	Vinyl Chloride	0.219		J	Low continuing calibration recovery
410-19766-1	BOP-75i-1120 (DL)	1,1,1-Trichloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	1,1,2,2-Tetrachloroethane	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	1,1,2-Trichloroethane	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	1,1-Dichloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	1,1-Dichloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	1,2-Dichloroethane	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	1,2-Dichloropropane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	2-Hexanone	100	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	4-Methyl-2-pentanone	100	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Acetone	100	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Benzene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Bromodichloromethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Bromoform	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Bromomethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Carbon disulfide	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Carbon tetrachloride	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Chlorobenzene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Chloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Chloroform	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Chloromethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	cis-1,2-Dichloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	cis-1,3-Dichloropropene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Dibromochloromethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Ethylbenzene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Freon 113	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	m,p-Xylene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Methylene chloride	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	o-Xylene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Styrene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Tetrachloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Toluene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	trans-1,2-Dichloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	trans-1,3-Dichloropropene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Trichloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Trichlorofluoromethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Vinyl Acetate	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Vinyl Chloride	4.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (orig)	2-Butanone	2510	E	DNR	Do not report; use reanalysis result
410-19766-1	BOP-76i-1120 (orig)	Bromomethane	0.500	U	UJ	Low continuing calibration recovery

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
410-19766-1	BOP-76i-1120 (orig)	Chloroethane	0.500	U	UJ	Low continuing calibration recovery
410-19766-1	BOP-76i-1120 (orig)	Chloromethane	0.616		J	Low continuing calibration recovery
410-19766-1	BOP-76i-1120 (orig)	Vinyl Chloride	2.73		J	Low continuing calibration recovery
410-19766-1	BOP-76i-1120 (DL)	1,1,1-Trichloroethane	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	1,1,2,2-Tetrachloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	1,1,2-Trichloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	1,1-Dichloroethane	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	1,1-Dichloroethene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	1,2-Dichloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	1,2-Dichloropropane	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	2-Hexanone	250	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	4-Methyl-2-pentanone	250	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Acetone	250	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Benzene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Bromodichloromethane	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Bromoform	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Bromomethane	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Carbon disulfide	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Carbon tetrachloride	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Chlorobenzene	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Chloroethane	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Chloroform	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Chloromethane	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	cis-1,2-Dichloroethene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	cis-1,3-Dichloropropene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Dibromochloromethane	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Ethylbenzene	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Freon 113	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	m,p-Xylene	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Methylene chloride	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	o-Xylene	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Styrene	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Tetrachloroethene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Toluene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	trans-1,2-Dichloroethene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	trans-1,3-Dichloropropene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Trichloroethene	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Trichlorofluoromethane	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Vinyl Acetate	25.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Vinyl Chloride	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (orig)	2-Butanone	1080	E	DNR	Do not report; use reanalysis result
410-19766-1	BOP-77i-1120 (orig)	Bromomethane	0.500	U	UJ	Low continuing calibration recovery
410-19766-1	BOP-77i-1120 (orig)	Chloroethane	0.500	U	UJ	Low continuing calibration recovery
410-19766-1	BOP-77i-1120 (orig)	Chloromethane	0.536		J	Low continuing calibration recovery
410-19766-1	BOP-77i-1120 (orig)	Vinyl Chloride	1.24		J	Low continuing calibration recovery
410-19766-1	BOP-77i-1120 (DL)	1,1,1-Trichloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	1,1,2,2-Tetrachloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	1,1,2-Trichloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	1,1-Dichloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	1,1-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	1,2-Dichloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	1,2-Dichloropropane	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	2-Hexanone	93.9		DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	4-Methyl-2-pentanone	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Acetone	72.4		DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Benzene	2.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Bromodichloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Bromoform	10.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Bromomethane	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Carbon disulfide	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Carbon tetrachloride	2.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Chlorobenzene	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Chloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Chloroform	2.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Chloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	cis-1,2-Dichloroethene	3.94		DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	cis-1,3-Dichloropropene	2.00	U	DNR	Do not report; use original analysis result

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
410-19766-1	BOP-77i-1120 (DL)	Dibromochloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Ethylbenzene	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Freon 113	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	m,p-Xylene	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Methylene chloride	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	o-Xylene	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Styrene	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Tetrachloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Toluene	18.1		DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	trans-1,2-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	trans-1,3-Dichloropropene	2.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Trichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Trichlorofluoromethane	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Vinyl Acetate	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Vinyl Chloride	2.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (orig)	2-Butanone	6240	E	DNR	Do not report; use reanalysis result
410-19766-1	BOP-88i-1120 (orig)	Bromomethane	1.00	U	UJ	Low continuing calibration recovery
410-19766-1	BOP-88i-1120 (orig)	Chloroethane	1.00	U	UJ	Low continuing calibration recovery
410-19766-1	BOP-88i-1120 (orig)	Chloromethane	7.06		J	Low continuing calibration recovery
410-19766-1	BOP-88i-1120 (orig)	Vinyl Chloride	3.67		J	Low continuing calibration recovery
410-19766-1	BOP-88i-1120 (DL)	1,1,1-Trichloroethane	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	1,1,2,2-Tetrachloroethane	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	1,1,2-Trichloroethane	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	1,1-Dichloroethane	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	1,1-Dichloroethene	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	1,2-Dichloroethane	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	1,2-Dichloropropane	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	2-Hexanone	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	4-Methyl-2-pentanone	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Acetone	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Benzene	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Bromodichloromethane	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Bromoform	100	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Bromomethane	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Carbon disulfide	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Carbon tetrachloride	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Chlorobenzene	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Chloroethane	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Chloroform	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Chloromethane	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	cis-1,2-Dichloroethene	45.1		DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	cis-1,3-Dichloropropene	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Dibromochloromethane	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Ethylbenzene	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Freon 113	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	m,p-Xylene	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Methylene chloride	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	o-Xylene	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Styrene	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Tetrachloroethene	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Toluene	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	trans-1,2-Dichloroethene	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	trans-1,3-Dichloropropene	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Trichloroethene	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Trichlorofluoromethane	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Vinyl Acetate	50.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Vinyl Chloride	20.0	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-72i-1120 (orig)	Methane	12700	E	DNR	Do not report; use reanalysis result
410-19766-1	BOP-72i-1120 (DL)	Acetylene	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-72i-1120 (DL)	Ethane	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-72i-1120 (DL)	Ethene	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (orig)	Methane	17000	E	DNR	Do not report; use reanalysis result
410-19766-1	BOP-73i-1120 (orig)	Ethene	743	E	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Acetylene	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-73i-1120 (DL)	Ethane	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (orig)	Methane	13300	E	DNR	Do not report; use reanalysis result
410-19766-1	BOP-74i-1120 (orig)	Acetylene	5.00	U	UJ	Sample improperly preserved

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
410-19766-1	BOP-74i-1120 (orig)	Ethane	5.00	U	UJ	Sample improperly preserved
410-19766-1	BOP-74i-1120 (orig)	Ethene	6.16		J	Sample improperly preserved
410-19766-1	BOP-74i-1120 (DL)	Methane	17200		J	Sample improperly preserved
410-19766-1	BOP-74i-1120 (DL)	Acetylene	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Ethane	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-74i-1120 (DL)	Ethene	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (orig)	Methane	15900	E	DNR	Do not report; use reanalysis result
410-19766-1	BOP-75i-1120 (orig)	Acetylene	5.00	U	UJ	Sample improperly preserved
410-19766-1	BOP-75i-1120 (orig)	Ethane	5.00	U	UJ	Sample improperly preserved
410-19766-1	BOP-75i-1120 (orig)	Ethene	5.00	U	UJ	Sample improperly preserved
410-19766-1	BOP-75i-1120 (DL)	Methane	19200		J	Sample improperly preserved
410-19766-1	BOP-75i-1120 (DL)	Acetylene	1000	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Ethane	1000	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-75i-1120 (DL)	Ethene	1000	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (orig)	Methane	12400	E	DNR	Do not report; use reanalysis result
410-19766-1	BOP-76i-1120 (orig)	Acetylene	5.00	U	UJ	Sample improperly preserved
410-19766-1	BOP-76i-1120 (orig)	Ethane	63.3		J	Sample improperly preserved
410-19766-1	BOP-76i-1120 (orig)	Ethene	150		J	Sample improperly preserved
410-19766-1	BOP-76i-1120 (DL)	Methane	15800		J	Sample improperly preserved
410-19766-1	BOP-76i-1120 (DL)	Acetylene	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Ethane	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-76i-1120 (DL)	Ethene	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (orig)	Methane	12800	E	DNR	Do not report; use reanalysis result
410-19766-1	BOP-77i-1120 (orig)	Acetylene	5.00	U	UJ	Sample improperly preserved
410-19766-1	BOP-77i-1120 (orig)	Ethane	7.37		J	Sample improperly preserved
410-19766-1	BOP-77i-1120 (orig)	Ethene	7.22		J	Sample improperly preserved
410-19766-1	BOP-77i-1120 (DL)	Methane	14000		J	Sample improperly preserved
410-19766-1	BOP-77i-1120 (DL)	Acetylene	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Ethane	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (DL)	Ethene	500	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (orig)	Methane	9640	E	DNR	Do not report; use reanalysis result
410-19766-1	BOP-88i-1120 (orig)	Acetylene	5.00	U	UJ	Sample improperly preserved
410-19766-1	BOP-88i-1120 (orig)	Ethane	63.4		J	Sample improperly preserved; high surrogate recovery
410-19766-1	BOP-88i-1120 (orig)	Ethene	98.9		J	Sample improperly preserved; high surrogate recovery
410-19766-1	BOP-88i-1120 (DL)	Methane	12000		J	Sample improperly preserved
410-19766-1	BOP-88i-1120 (DL)	Acetylene	250	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Ethane	250	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (DL)	Ethene	250	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (RE)	Methane	9000	E	DNR	Do not report; use reanalysis result
410-19766-1	BOP-88i-1120 (RE)	Acetylene	5.00	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (RE)	Ethane	60.8		DNR	Do not report; use original analysis result
410-19766-1	BOP-88i-1120 (RE)	Ethene	95.7		DNR	Do not report; use original analysis result
410-19766-1	BOP-72i-1120	Nitrogen, Nitrate	0.500	U	UJ	Analyzed outside hold time
410-19766-1	BOP-73i-1120 (orig)	Nitrogen, Nitrate	0.500	U	DNR	Do not report; use reanalysis result
410-19766-1	BOP-73i-1120 (RE)	Nitrogen, Nitrate	0.120	H	J	Analyzed outside hold time
410-19766-1	BOP-75i-1120	Nitrogen, Nitrate	0.500	U	UJ	Analyzed outside hold time
410-19766-1	BOP-76i-1120 (orig)	Nitrogen, Nitrate	0.500	U	UJ	Analyzed outside hold time
410-19766-1	BOP-76i-1120 (RE)	Nitrogen, Nitrate	0.100	U	DNR	Do not report; use original analysis result
410-19766-1	BOP-77i-1120 (orig)	Nitrogen, Nitrate	20.3	H	DNR	Do not report; use reanalysis result
410-19766-1	BOP-77i-1120 (RE)	Nitrogen, Nitrate	21.2	H	J	Analyzed outside hold time
410-19766-1	BOP-88i-1120	Total Iron	5120		J	Sample improperly preserved
410-19766-1	BOP-88i-1120	Dissolved Iron	264		J	Sample improperly preserved
410-19766-1	BOP-74i-1120	Total Iron	186		J	High relative percent difference between dissolved and total concentration
410-19766-1	BOP-74i-1120	Dissolved Iron	362		J	High relative percent difference between dissolved and total concentration
410-19949-1	LAI-8-1120	1,1,1-Trichloroethane	0.500	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	1,1,2,2-Tetrachloroethane	0.200	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	1,1,2-Trichloroethane	0.200	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	1,1-Dichloroethane	0.500	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	1,1-Dichloroethene	0.200	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	1,2-Dichloroethane	0.200	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	1,2-Dichloropropane	0.500	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	2-Butanone	6.05		J	Headspace present in sample vial

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
410-19949-1	LAI-8-1120	2-Hexanone	16.3		J	Headspace present in sample vial
410-19949-1	LAI-8-1120	4-Methyl-2-pentanone	12.6		J	Headspace present in sample vial
410-19949-1	LAI-8-1120	Acetone	25.4		J	Headspace present in sample vial
410-19949-1	LAI-8-1120	Benzene	0.200	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	Bromodichloromethane	0.500	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	Bromoform	1.00	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	Bromomethane	0.500	U	UJ	Headspace present in sample vial; low continuing calibration recovery
410-19949-1	LAI-8-1120	Carbon disulfide	0.500	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	Carbon tetrachloride	0.200	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	Chlorobenzene	0.500	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	Chloroethane	0.500	U	UJ	Headspace present in sample vial; low continuing calibration recovery
410-19949-1	LAI-8-1120	Chloroform	0.200	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	Chloromethane	0.500	U	UJ	Headspace present in sample vial; low continuing calibration recovery
410-19949-1	LAI-8-1120	cis-1,2-Dichloroethene	24.2		J	Headspace present in sample vial
410-19949-1	LAI-8-1120	cis-1,3-Dichloropropene	0.200	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	Dibromochloromethane	0.500	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	Ethylbenzene	0.500	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	Freon 113	0.500	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	m,p-Xylene	0.500	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	Methylene chloride	0.500	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	o-Xylene	0.500	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	Styrene	0.500	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	Tetrachloroethene	0.218		J	Headspace present in sample vial
410-19949-1	LAI-8-1120	Toluene	0.200	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	trans-1,2-Dichloroethene	0.243		J	Headspace present in sample vial
410-19949-1	LAI-8-1120	trans-1,3-Dichloropropene	0.200	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	Trichloroethene	1.70		J	Headspace present in sample vial
410-19949-1	LAI-8-1120	Trichlorofluoromethane	0.500	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	Vinyl Acetate	0.500	U	UJ	Headspace present in sample vial
410-19949-1	LAI-8-1120	Vinyl Chloride	0.659		J	Headspace present in sample vial; low continuing calibration recovery
410-19949-1	LAI-8-1120	C12-C24	133		J	High surrogate recovery
410-19949-1	LAI-8-1120	Diesel	170		J	High surrogate recovery
410-19949-1	LAI-8-1120	C16-C36	246		J	High surrogate recovery
410-19949-1	LAI-8-1120	Nitrate (Nitrogen)	0.100	U	UJ	Analyzed outside hold time
410-19950-1	E-6-1120 (orig)	Methane	1780	E	DNR	Do not report; use reanalysis result
410-19950-1	E-6-1120 (DL)	Acetylene	50.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Ethane	50.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Ethene	50.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (orig)	Ethene	5.18		J	High surrogate recovery
410-19950-1	E-7-1120 (orig)	Methane	14200	E	DNR	Do not report; use reanalysis result
410-19950-1	E-7-1120 (DL)	Acetylene	500	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Ethane	500	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Ethene	500	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (RA)	Acetylene	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (RA)	Ethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (RA)	Ethene	7.00		DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (RA)	Methane	18300	E	DNR	Do not report; use reanalysis result
410-19950-1	BOP-09i-1120 (orig)	Methane	24700	E	DNR	Do not report; use reanalysis result
410-19950-1	BOP-09i-1120 (DL)	Acetylene	1000	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Ethane	1000	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Ethene	1000	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (orig)	Methane	18800	E	DNR	Do not report; use reanalysis result
410-19950-1	BOP-10i-1120 (DL)	Acetylene	1000	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Ethane	1000	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Ethene	1000	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120	Total Organic Carbon	21700		J	Sample improperly preserved
410-19950-1	E-6-1120 (orig)	cis-1,2-Dichloroethene	67.6	E	DNR	Do not report; use reanalysis result
410-19950-1	E-6-1120 (orig)	Vinyl Chloride	54.9	E	DNR	Do not report; use reanalysis result
410-19950-1	E-6-1120 (orig)	1,1,1-Trichloroethane	0.500	U	UJ	Low continuing calibration recovery
410-19950-1	E-6-1120 (orig)	1,2-Dichloroethane	0.200	U	UJ	Low continuing calibration recovery
410-19950-1	E-6-1120 (orig)	Carbon tetrachloride	0.200	U	UJ	Low continuing calibration recovery
410-19950-1	E-6-1120 (DL)	1,1,1-Trichloroethane	5.00	U	DNR	Do not report; use original analysis result

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
410-19950-1	E-6-1120 (DL)	1,1,2,2-Tetrachloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	1,1,2-Trichloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	1,1-Dichloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	1,1-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	1,2-Dichloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	1,2-Dichloropropane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	2-Butanone	50.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	2-Hexanone	50.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	4-Methyl-2-pentanone	50.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Acetone	64.3	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Benzene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Bromodichloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Bromoform	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Bromomethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Carbon disulfide	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Carbon tetrachloride	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Chlorobenzene	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Chloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Chloroform	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Chloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	cis-1,3-Dichloropropene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Dibromochloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Ethylbenzene	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Freon 113	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	m,p-Xylene	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Methylene chloride	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	o-Xylene	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Styrene	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Tetrachloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Toluene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	trans-1,2-Dichloroethene	2.68		DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	trans-1,3-Dichloropropene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Trichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Trichlorofluoromethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Vinyl Acetate	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-6-1120 (DL)	Vinyl Chloride	37.7		J	Do not report; use original analysis result
410-19950-1	E-7-1120 (orig)	1,1,1-Trichloroethane	0.500	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	1,1,2,2-Tetrachloroethane	0.200	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	1,1,2-Trichloroethane	0.200	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	1,1-Dichloroethane	0.500	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	1,1-Dichloroethene	0.683		J	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	1,2-Dichloroethane	0.200	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	1,2-Dichloropropane	0.500	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	2-Butanone	5380	E	DNR	Do not report; use reanalysis result
410-19950-1	E-7-1120 (orig)	2-Hexanone	33.6		J	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	4-Methyl-2-pentanone	5.00	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Acetone	363	E	DNR	Do not report; use reanalysis result
410-19950-1	E-7-1120 (orig)	Benzene	0.200	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Bromodichloromethane	0.500	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Bromoform	1.00	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Bromomethane	0.500	U	UJ	Headspace present in sample vial; low continuing calibration recovery
410-19950-1	E-7-1120 (orig)	Carbon disulfide	0.500	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Carbon tetrachloride	0.200	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Chlorobenzene	0.500	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Chloroethane	0.500	U	UJ	Headspace present in sample vial; low continuing calibration recovery
410-19950-1	E-7-1120 (orig)	Chloroform	0.200	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Chloromethane	0.500	U	UJ	Headspace present in sample vial; low continuing calibration recovery
410-19950-1	E-7-1120 (orig)	cis-1,2-Dichloroethene	18.6		J	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	cis-1,3-Dichloropropene	0.200	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Dibromochloromethane	0.500	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Ethylbenzene	0.500	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Freon 113	0.500	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	m,p-Xylene	0.500	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Methylene chloride	1.98		J	Headspace present in sample vial

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
410-19950-1	E-7-1120 (orig)	o-Xylene	0.500	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Styrene	0.500	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Tetrachloroethene	4.53		J	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Toluene	1.04		J	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	trans-1,2-Dichloroethene	0.200	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	trans-1,3-Dichloropropene	0.200	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Trichloroethene	21.3		J	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Trichlorofluoromethane	0.500	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Vinyl Acetate	0.500	U	UJ	Headspace present in sample vial
410-19950-1	E-7-1120 (orig)	Vinyl Chloride	0.218		J	Headspace present in sample vial; low continuing calibration recovery
410-19950-1	E-7-1120 (DL)	1,1,1-Trichloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	1,1,2,2-Tetrachloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	1,1,2-Trichloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	1,1-Dichloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	1,1-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	1,2-Dichloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	1,2-Dichloropropane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	2-Butanone	13200	E	DNR	Do not report; use reanalysis result
410-19950-1	E-7-1120 (DL)	2-Hexanone	50.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	4-Methyl-2-pentanone	50.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Acetone	402		J	Headspace present in sample vial
410-19950-1	E-7-1120 (DL)	Benzene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Bromodichloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Bromoform	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Bromomethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Carbon disulfide	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Carbon tetrachloride	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Chlorobenzene	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Chloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Chloroform	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Chloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	cis-1,2-Dichloroethene	17.1		DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	cis-1,3-Dichloropropene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Dibromochloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Ethylbenzene	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Freon 113	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	m,p-Xylene	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Methylene chloride	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	o-Xylene	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Styrene	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Tetrachloroethene	3.83		DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Toluene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	trans-1,2-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	trans-1,3-Dichloropropene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Trichloroethene	19.0		DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Trichlorofluoromethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Vinyl Acetate	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL)	Vinyl Chloride	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	1,1,1-Trichloroethane	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	1,1,2,2-Tetrachloroethane	40.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	1,1,2-Trichloroethane	40.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	1,1-Dichloroethane	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	1,1-Dichloroethene	40.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	1,2-Dichloroethane	40.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	1,2-Dichloropropane	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	2-Butanone	10200		J	Headspace present in sample vial
410-19950-1	E-7-1120 (DL2)	2-Hexanone	1000	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	4-Methyl-2-pentanone	1000	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Acetone	1000	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Benzene	40.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Bromodichloromethane	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Bromoform	200	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Bromomethane	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Carbon disulfide	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Carbon tetrachloride	40.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Chlorobenzene	100	U	DNR	Do not report; use original analysis result

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
410-19950-1	E-7-1120 (DL2)	Chloroethane	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Chloroform	40.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Chloromethane	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	cis-1,2-Dichloroethene	40.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	cis-1,3-Dichloropropene	40.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Dibromochloromethane	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Ethylbenzene	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Freon 113	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	m,p-Xylene	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Methylene chloride	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	o-Xylene	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Styrene	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Tetrachloroethene	40.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Toluene	40.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	trans-1,2-Dichloroethene	40.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	trans-1,3-Dichloropropene	40.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Trichloroethene	40.0	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Trichlorofluoromethane	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Vinyl Acetate	100	U	DNR	Do not report; use original analysis result
410-19950-1	E-7-1120 (DL2)	Vinyl Chloride	40.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (orig)	Toluene	92.3	E	DNR	Do not report; use reanalysis result
410-19950-1	BOP-09i-1120 (orig)	Bromomethane	1.00	U	UJ	Low continuing calibration recovery
410-19950-1	BOP-09i-1120 (orig)	Chloroethane	1.00	U	UJ	Low continuing calibration recovery
410-19950-1	BOP-09i-1120 (orig)	Chloromethane	1.00	U	UJ	Low continuing calibration recovery
410-19950-1	BOP-09i-1120 (orig)	Vinyl Chloride	1.01		J	Low continuing calibration recovery
410-19950-1	BOP-09i-1120 (DL)	1,1,1-Trichloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	1,1,2,2-Tetrachloroethane	4.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	1,1,2-Trichloroethane	4.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	1,1-Dichloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	1,1-Dichloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	1,2-Dichloroethane	4.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	1,2-Dichloropropane	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	2-Butanone	100	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	2-Hexanone	100	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	4-Methyl-2-pentanone	100	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Acetone	100	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Benzene	4.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Bromodichloromethane	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Bromoform	20.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Bromomethane	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Carbon disulfide	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Carbon tetrachloride	4.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Chlorobenzene	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Chloroethane	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Chloroform	4.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Chloromethane	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	cis-1,2-Dichloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	cis-1,3-Dichloropropene	4.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Dibromochloromethane	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Ethylbenzene	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Freon 113	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	m,p-Xylene	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Methylene chloride	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	o-Xylene	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Styrene	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Tetrachloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	trans-1,2-Dichloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	trans-1,3-Dichloropropene	4.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Trichloroethene	4.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Trichlorofluoromethane	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Vinyl Acetate	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-09i-1120 (DL)	Vinyl Chloride	4.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (orig)	1,1,1-Trichloroethane	0.500	U	UJ	Headspace present in sample vial; low continuing calibration recovery
410-19950-1	BOP-10i-1120 (orig)	1,1,2,2-Tetrachloroethane	0.200	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	1,1,2-Trichloroethane	0.200	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	1,1-Dichloroethane	0.500	U	UJ	Headspace present in sample vial

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
410-19950-1	BOP-10i-1120 (orig)	1,1-Dichloroethene	1.27		J	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	1,2-Dichloroethane	0.200	U	UJ	Headspace present in sample vial; low continuing calibration recovery
410-19950-1	BOP-10i-1120 (orig)	1,2-Dichloropropane	0.500	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	2-Butanone	190		J	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	2-Hexanone	5.00	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	4-Methyl-2-pentanone	5.00	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Acetone	5.00	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Benzene	0.200	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Bromodichloromethane	0.500	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Bromoform	1.00	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Bromomethane	0.500	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Carbon disulfide	0.539		J	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Carbon tetrachloride	0.200	U	UJ	Headspace present in sample vial; low continuing calibration recovery
410-19950-1	BOP-10i-1120 (orig)	Chlorobenzene	0.500	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Chloroethane	0.500	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Chloroform	0.200	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Chloromethane	0.500	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	cis-1,2-Dichloroethene	17.9		J	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	cis-1,3-Dichloropropene	0.200	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Dibromochloromethane	0.500	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Ethylbenzene	0.500	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Freon 113	0.500	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	m,p-Xylene	0.500	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Methylene chloride	0.500	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	o-Xylene	0.500	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Styrene	0.500	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Tetrachloroethene	9.87		J	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Toluene	0.900		J	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	trans-1,2-Dichloroethene	0.200	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	trans-1,3-Dichloropropene	0.200	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Trichloroethene	29.5	E	DNR	Do not report; use reanalysis result
410-19950-1	BOP-10i-1120 (orig)	Trichlorofluoromethane	0.500	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Vinyl Acetate	0.500	U	UJ	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (orig)	Vinyl Chloride	1.01		J	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (DL)	1,1,1-Trichloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	1,1,2,2-Tetrachloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	1,1,2-Trichloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	1,1-Dichloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	1,1-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	1,2-Dichloroethane	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	1,2-Dichloropropane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	2-Butanone	179	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	2-Hexanone	50.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	4-Methyl-2-pentanone	50.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Acetone	50.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Benzene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Bromodichloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Bromoform	10.0	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Bromomethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Carbon disulfide	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Carbon tetrachloride	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Chlorobenzene	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Chloroethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Chloroform	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Chloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	cis-1,2-Dichloroethene	15.5		DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	cis-1,3-Dichloropropene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Dibromochloromethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Ethylbenzene	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Freon 113	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	m,p-Xylene	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Methylene chloride	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	o-Xylene	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Styrene	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Tetrachloroethene	9.15		DNR	Do not report; use original analysis result

Table 1
Summary of Data Qualifiers
Boeing Portland TGA Phase I

Data Package	Sample Number	Analyte	Result	Lab Qualifier	Data Qualifier	Reason
410-19950-1	BOP-10i-1120 (DL)	Toluene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	trans-1,2-Dichloroethene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	trans-1,3-Dichloropropene	2.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Trichloroethene	27.7		J	Headspace present in sample vial
410-19950-1	BOP-10i-1120 (DL)	Trichlorofluoromethane	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Vinyl Acetate	5.00	U	DNR	Do not report; use original analysis result
410-19950-1	BOP-10i-1120 (DL)	Vinyl Chloride	2.00	U	DNR	Do not report; use original analysis result

E = concentration exceeds the calibration range

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.

DNR = do not report

eurofins | Environment Testing America



ANALYTICAL REPORT

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

Laboratory Job ID: 410-19551-1
Client Project/Site: Boeing of Portland 0025116.120.412

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

Attn: Evelyn Ives

Kay Hower

Authorized for release by:
12/2/2020 4:22:48 PM

Kay Hower, Principal Project Manager
(717)556-7364
Kay.Hower@eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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. 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. 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.



Kay Hower
Principal Project Manager
12/2/2020 4:22:48 PM

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Detection Summary 6
Client Sample Results 7
Surrogate Summary 13
QC Sample Results 14
QC Association Summary 20
Lab Chronicle 22
Certification Summary 24
Method Summary 25
Sample Summary 26
Chain of Custody 27
Receipt Checklists 28

Definitions/Glossary

Client: Landau & Associates, Inc. Job ID: 410-19551-1
Project/Site: Boeing of Portland 0025116.120.412

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

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

Metals

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

General Chemistry

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: 410-19551-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-19551-1

Receipt
The samples were received on 11/5/2020 10:33 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.6º C.

GC/MS VOA
Method 8260C LL: The continuing calibration verification (CCV) associated with batch 410-65414 recovered outside acceptance criteria, low biased, for Bromomethane, Chloromethane and Vinyl chloride. 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.

Method 8260C LL: The following analyte(s) recovered outside control limits for the LCSD associated with analytical batch 410-65414: Freon 113. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

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

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

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

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

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

Detection Summary

Client: Landau & Associates, Inc.
Job ID: 410-19551-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: TowerInf-1120 — Lab Sample ID: 410-19551-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	1.63		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	1.61		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	0.380		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	10.5		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.212		0.200		ug/L	1		8260C LL	Total/NA
Sulfate	7.89		1.00		mg/L	1		EPA 300.0 R2.1	Total/NA
Iron	0.250		0.200		mg/L	1		6010D	Total Recoverable

Client Sample ID: TowerInD-1120 — Lab Sample ID: 410-19551-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	1.64		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	1.57		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	0.365		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	10.4		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.225		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: TowerEff-1120 — Lab Sample ID: 410-19551-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Nitrogen, Nitrate	1.38		0.500		mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	7.69		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
Iron	0.504		0.200		mg/L	1		6010D	Total Recoverable
Iron	0.347		0.206		mg/L	1		6010D	Dissolved

Client Sample ID: TowerEfD-1120 — Lab Sample ID: 410-19551-4

No Detections.

Client Sample ID: Trip Blanks — Lab Sample ID: 410-19551-5

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client: Landau & Associates, Inc.
Job ID: 410-19551-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: TowerInf-1120
Lab Sample ID: 410-19551-1
Date Collected: 11/04/20 15:25
Matrix: Water
Date Received: 11/05/20 10:33

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			11/13/20 02:42	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/13/20 02:42	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/13/20 02:42	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/13/20 02:42	1
1,1-Dichloroethene	**1.63**		0.200		ug/L			11/13/20 02:42	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/13/20 02:42	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/13/20 02:42	1
2-Butanone	5.00	U	5.00		ug/L			11/13/20 02:42	1
2-Hexanone	5.00	U	5.00		ug/L			11/13/20 02:42	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/13/20 02:42	1
Acetone	5.00	U	5.00		ug/L			11/13/20 02:42	1
Benzene	0.200	U	0.200		ug/L			11/13/20 02:42	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/13/20 02:42	1
Bromoform	1.00	U	1.00		ug/L			11/13/20 02:42	1
Bromomethane	0.500	U	0.500		ug/L			11/13/20 02:42	1
Carbon disulfide	0.500	U	0.500		ug/L			11/13/20 02:42	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/13/20 02:42	1
Chlorobenzene	0.500	U	0.500		ug/L			11/13/20 02:42	1
Chloroethane	0.500	U	0.500		ug/L			11/13/20 02:42	1
Chloroform	0.200	U	0.200		ug/L			11/13/20 02:42	1
Chloromethane	0.500	U	0.500		ug/L			11/13/20 02:42	1
cis-1,2-Dichloroethene	**1.61**		0.200		ug/L			11/13/20 02:42	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/13/20 02:42	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/13/20 02:42	1
Ethylbenzene	0.500	U	0.500		ug/L			11/13/20 02:42	1
Freon 113	0.500	U *	0.500		ug/L			11/13/20 02:42	1
m&p-Xylene	0.500	U	0.500		ug/L			11/13/20 02:42	1
Methylene Chloride	0.500	U	0.500		ug/L			11/13/20 02:42	1
o-Xylene	0.500	U	0.500		ug/L			11/13/20 02:42	1
Styrene	0.500	U	0.500		ug/L			11/13/20 02:42	1
Tetrachloroethene	**0.380**		0.200		ug/L			11/13/20 02:42	1
Toluene	0.200	U	0.200		ug/L			11/13/20 02:42	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/13/20 02:42	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/13/20 02:42	1
Trichloroethene	**10.5**		0.200		ug/L			11/13/20 02:42	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/13/20 02:42	1
Vinyl acetate	0.500	U	0.500		ug/L			11/13/20 02:42	1
Vinyl chloride	**0.212**		0.200		ug/L			11/13/20 02:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*11/13/20 02:42*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/13/20 02:42*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*11/13/20 02:42*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/13/20 02:42*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**7.89**		1.00		mg/L			11/21/20 10:57	1

Client Sample ID: TowerInf-1120
Lab Sample ID: 410-19551-1

Date Collected: 11/04/20 15:25
Matrix: Water
Date Received: 11/05/20 10:33

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.250**		0.200		mg/L		11/06/20 05:14	11/12/20 09:35	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.206	U	0.206		mg/L		11/08/20 09:35	11/16/20 11:14	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			11/26/20 00:12	1

Client Sample ID: TowerInD-1120
Lab Sample ID: 410-19551-2

Date Collected: 11/04/20 15:35
Matrix: Water
Date Received: 11/05/20 10:33

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			11/13/20 03:04	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/13/20 03:04	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/13/20 03:04	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/13/20 03:04	1
1,1-Dichloroethene	**1.64**		0.200		ug/L			11/13/20 03:04	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/13/20 03:04	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/13/20 03:04	1
2-Butanone	5.00	U	5.00		ug/L			11/13/20 03:04	1
2-Hexanone	5.00	U	5.00		ug/L			11/13/20 03:04	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/13/20 03:04	1
Acetone	5.00	U	5.00		ug/L			11/13/20 03:04	1
Benzene	0.200	U	0.200		ug/L			11/13/20 03:04	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/13/20 03:04	1
Bromoform	1.00	U	1.00		ug/L			11/13/20 03:04	1
Bromomethane	0.500	U	0.500		ug/L			11/13/20 03:04	1
Carbon disulfide	0.500	U	0.500		ug/L			11/13/20 03:04	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/13/20 03:04	1
Chlorobenzene	0.500	U	0.500		ug/L			11/13/20 03:04	1
Chloroethane	0.500	U	0.500		ug/L			11/13/20 03:04	1
Chloroform	0.200	U	0.200		ug/L			11/13/20 03:04	1
Chloromethane	0.500	U	0.500		ug/L			11/13/20 03:04	1
cis-1,2-Dichloroethene	**1.57**		0.200		ug/L			11/13/20 03:04	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/13/20 03:04	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/13/20 03:04	1
Ethylbenzene	0.500	U	0.500		ug/L			11/13/20 03:04	1
Freon 113	0.500	U *	0.500		ug/L			11/13/20 03:04	1
m&p-Xylene	0.500	U	0.500		ug/L			11/13/20 03:04	1
Methylene Chloride	0.500	U	0.500		ug/L			11/13/20 03:04	1
o-Xylene	0.500	U	0.500		ug/L			11/13/20 03:04	1
Styrene	0.500	U	0.500		ug/L			11/13/20 03:04	1
Tetrachloroethene	**0.365**		0.200		ug/L			11/13/20 03:04	1
Toluene	0.200	U	0.200		ug/L			11/13/20 03:04	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/13/20 03:04	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/13/20 03:04	1

Client Sample ID: TowerInD-1120
Lab Sample ID: 410-19551-2

Date Collected: 11/04/20 15:35
Matrix: Water
Date Received: 11/05/20 10:33

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	**10.4**		0.200		ug/L			11/13/20 03:04	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/13/20 03:04	1
Vinyl acetate	0.500	U	0.500		ug/L			11/13/20 03:04	1
Vinyl chloride	**0.225**		0.200		ug/L			11/13/20 03:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*11/13/20 03:04*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/13/20 03:04*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*11/13/20 03:04*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/13/20 03:04*	*1*

Client Sample ID: TowerEff-1120
Lab Sample ID: 410-19551-3

Date Collected: 11/04/20 15:00
Matrix: Water
Date Received: 11/05/20 10:33

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			11/13/20 03:26	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/13/20 03:26	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/13/20 03:26	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/13/20 03:26	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/13/20 03:26	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/13/20 03:26	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/13/20 03:26	1
2-Butanone	5.00	U	5.00		ug/L			11/13/20 03:26	1
2-Hexanone	5.00	U	5.00		ug/L			11/13/20 03:26	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/13/20 03:26	1
Acetone	5.00	U	5.00		ug/L			11/13/20 03:26	1
Benzene	0.200	U	0.200		ug/L			11/13/20 03:26	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/13/20 03:26	1
Bromoform	1.00	U	1.00		ug/L			11/13/20 03:26	1
Bromomethane	0.500	U	0.500		ug/L			11/13/20 03:26	1
Carbon disulfide	0.500	U	0.500		ug/L			11/13/20 03:26	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/13/20 03:26	1
Chlorobenzene	0.500	U	0.500		ug/L			11/13/20 03:26	1
Chloroethane	0.500	U	0.500		ug/L			11/13/20 03:26	1
Chloroform	0.200	U	0.200		ug/L			11/13/20 03:26	1
Chloromethane	0.500	U	0.500		ug/L			11/13/20 03:26	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/13/20 03:26	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/13/20 03:26	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/13/20 03:26	1
Ethylbenzene	0.500	U	0.500		ug/L			11/13/20 03:26	1
Freon 113	0.500	U *	0.500		ug/L			11/13/20 03:26	1
m&p-Xylene	0.500	U	0.500		ug/L			11/13/20 03:26	1
Methylene Chloride	0.500	U	0.500		ug/L			11/13/20 03:26	1
o-Xylene	0.500	U	0.500		ug/L			11/13/20 03:26	1
Styrene	0.500	U	0.500		ug/L			11/13/20 03:26	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/13/20 03:26	1
Toluene	0.200	U	0.200		ug/L			11/13/20 03:26	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/13/20 03:26	1

Client Sample ID: TowerEff-1120
Lab Sample ID: 410-19551-3

Date Collected: 11/04/20 15:00
Matrix: Water
Date Received: 11/05/20 10:33

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/13/20 03:26	1
Trichloroethene	0.200	U	0.200		ug/L			11/13/20 03:26	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/13/20 03:26	1
Vinyl acetate	0.500	U	0.500		ug/L			11/13/20 03:26	1
Vinyl chloride	0.200	U	0.200		ug/L			11/13/20 03:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/13/20 03:26*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/13/20 03:26*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*11/13/20 03:26*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/13/20 03:26*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**1.38**		0.500		mg/L			11/06/20 17:35	5
Nitrogen, Nitrite	0.500	U	0.500		mg/L			11/06/20 17:35	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**7.69**		5.00		mg/L			11/06/20 17:35	5

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.504**		0.200		mg/L		11/06/20 05:14	11/12/20 09:38	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.347**		0.206		mg/L		11/08/20 09:35	11/16/20 11:17	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-N	0.240	U	0.240		mg/L			11/12/20 14:47	1
Total Organic Carbon	1.00	U	1.00		mg/L			11/25/20 23:16	1

Client Sample ID: TowerEfD-1120
Lab Sample ID: 410-19551-4

Date Collected: 11/04/20 15:10
Matrix: Water
Date Received: 11/05/20 10:33

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			11/13/20 03:48	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/13/20 03:48	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/13/20 03:48	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/13/20 03:48	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/13/20 03:48	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/13/20 03:48	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/13/20 03:48	1
2-Butanone	5.00	U	5.00		ug/L			11/13/20 03:48	1
2-Hexanone	5.00	U	5.00		ug/L			11/13/20 03:48	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/13/20 03:48	1
Acetone	5.00	U	5.00		ug/L			11/13/20 03:48	1

Client Sample ID: TowerEfD-1120
Lab Sample ID: 410-19551-4

Date Collected: 11/04/20 15:10
Matrix: Water
Date Received: 11/05/20 10:33

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.200	U	0.200		ug/L			11/13/20 03:48	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/13/20 03:48	1
Bromoform	1.00	U	1.00		ug/L			11/13/20 03:48	1
Bromomethane	0.500	U	0.500		ug/L			11/13/20 03:48	1
Carbon disulfide	0.500	U	0.500		ug/L			11/13/20 03:48	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/13/20 03:48	1
Chlorobenzene	0.500	U	0.500		ug/L			11/13/20 03:48	1
Chloroethane	0.500	U	0.500		ug/L			11/13/20 03:48	1
Chloroform	0.200	U	0.200		ug/L			11/13/20 03:48	1
Chloromethane	0.500	U	0.500		ug/L			11/13/20 03:48	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/13/20 03:48	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/13/20 03:48	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/13/20 03:48	1
Ethylbenzene	0.500	U	0.500		ug/L			11/13/20 03:48	1
Freon 113	0.500	U *	0.500		ug/L			11/13/20 03:48	1
m&p-Xylene	0.500	U	0.500		ug/L			11/13/20 03:48	1
Methylene Chloride	0.500	U	0.500		ug/L			11/13/20 03:48	1
o-Xylene	0.500	U	0.500		ug/L			11/13/20 03:48	1
Styrene	0.500	U	0.500		ug/L			11/13/20 03:48	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/13/20 03:48	1
Toluene	0.200	U	0.200		ug/L			11/13/20 03:48	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/13/20 03:48	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/13/20 03:48	1
Trichloroethene	0.200	U	0.200		ug/L			11/13/20 03:48	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/13/20 03:48	1
Vinyl acetate	0.500	U	0.500		ug/L			11/13/20 03:48	1
Vinyl chloride	0.200	U	0.200		ug/L			11/13/20 03:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*11/13/20 03:48*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*11/13/20 03:48*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*11/13/20 03:48*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/13/20 03:48*	*1*

Client Sample ID: Trip Blanks
Lab Sample ID: 410-19551-5

Date Collected: 11/04/20 00:00
Matrix: Water
Date Received: 11/05/20 10:33

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			11/12/20 22:39	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/12/20 22:39	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/12/20 22:39	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/12/20 22:39	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 22:39	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/12/20 22:39	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/12/20 22:39	1
2-Butanone	5.00	U	5.00		ug/L			11/12/20 22:39	1
2-Hexanone	5.00	U	5.00		ug/L			11/12/20 22:39	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/12/20 22:39	1

Client: Landau & Associates, Inc.
Job ID: 410-19551-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: Trip Blanks
Lab Sample ID: 410-19551-5
Date Collected: 11/04/20 00:00
Matrix: Water
Date Received: 11/05/20 10:33

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetone	5.00	U	5.00		ug/L			11/12/20 22:39	1
Benzene	0.200	U	0.200		ug/L			11/12/20 22:39	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/12/20 22:39	1
Bromoform	1.00	U	1.00		ug/L			11/12/20 22:39	1
Bromomethane	0.500	U	0.500		ug/L			11/12/20 22:39	1
Carbon disulfide	0.500	U	0.500		ug/L			11/12/20 22:39	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/12/20 22:39	1
Chlorobenzene	0.500	U	0.500		ug/L			11/12/20 22:39	1
Chloroethane	0.500	U	0.500		ug/L			11/12/20 22:39	1
Chloroform	0.200	U	0.200		ug/L			11/12/20 22:39	1
Chloromethane	0.500	U	0.500		ug/L			11/12/20 22:39	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 22:39	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 22:39	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/12/20 22:39	1
Ethylbenzene	0.500	U	0.500		ug/L			11/12/20 22:39	1
Freon 113	0.500	U *	0.500		ug/L			11/12/20 22:39	1
m&p-Xylene	0.500	U	0.500		ug/L			11/12/20 22:39	1
Methylene Chloride	0.500	U	0.500		ug/L			11/12/20 22:39	1
o-Xylene	0.500	U	0.500		ug/L			11/12/20 22:39	1
Styrene	0.500	U	0.500		ug/L			11/12/20 22:39	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/12/20 22:39	1
Toluene	0.200	U	0.200		ug/L			11/12/20 22:39	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 22:39	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 22:39	1
Trichloroethene	0.200	U	0.200		ug/L			11/12/20 22:39	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/12/20 22:39	1
Vinyl acetate	0.500	U	0.500		ug/L			11/12/20 22:39	1
Vinyl chloride	0.200	U	0.200		ug/L			11/12/20 22:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*		*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*			*11/12/20 22:39*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*			*11/12/20 22:39*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*			*11/12/20 22:39*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*			*11/12/20 22:39*	*1*

Surrogate Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19551-1

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)
410-19551-1	TowerInf-1120	101	93	96	101
410-19551-2	TowerInD-1120	100	93	96	102
410-19551-3	TowerEff-1120	98	93	96	102
410-19551-4	TowerEfD-1120	100	94	95	101
410-19551-5	Trip Blanks	102	93	97	100
LCS 410-65414/5	Lab Control Sample	100	93	99	101
LCS 410-65414/7	Lab Control Sample	100	93	98	102
LCSD 410-65414/6	Lab Control Sample Dup	99	94	98	101
LCSD 410-65414/8	Lab Control Sample Dup	100	92	98	102
MB 410-65414/10	Method Blank	100	93	95	102

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 410-65414/10
Matrix: Water
Analysis Batch: 65414

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			11/12/20 21:57	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/12/20 21:57	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/12/20 21:57	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/12/20 21:57	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 21:57	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/12/20 21:57	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/12/20 21:57	1
2-Butanone	5.00	U	5.00		ug/L			11/12/20 21:57	1
2-Hexanone	5.00	U	5.00		ug/L			11/12/20 21:57	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/12/20 21:57	1
Acetone	5.00	U	5.00		ug/L			11/12/20 21:57	1
Benzene	0.200	U	0.200		ug/L			11/12/20 21:57	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/12/20 21:57	1
Bromoform	1.00	U	1.00		ug/L			11/12/20 21:57	1
Bromomethane	0.500	U	0.500		ug/L			11/12/20 21:57	1
Carbon disulfide	0.500	U	0.500		ug/L			11/12/20 21:57	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/12/20 21:57	1
Chlorobenzene	0.500	U	0.500		ug/L			11/12/20 21:57	1
Chloroethane	0.500	U	0.500		ug/L			11/12/20 21:57	1
Chloroform	0.200	U	0.200		ug/L			11/12/20 21:57	1
Chloromethane	0.500	U	0.500		ug/L			11/12/20 21:57	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 21:57	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 21:57	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/12/20 21:57	1
Ethylbenzene	0.500	U	0.500		ug/L			11/12/20 21:57	1
Freon 113	0.500	U	0.500		ug/L			11/12/20 21:57	1
m&p-Xylene	0.500	U	0.500		ug/L			11/12/20 21:57	1
Methylene Chloride	0.500	U	0.500		ug/L			11/12/20 21:57	1
o-Xylene	0.500	U	0.500		ug/L			11/12/20 21:57	1
Styrene	0.500	U	0.500		ug/L			11/12/20 21:57	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/12/20 21:57	1
Toluene	0.200	U	0.200		ug/L			11/12/20 21:57	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 21:57	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 21:57	1
Trichloroethene	0.200	U	0.200		ug/L			11/12/20 21:57	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/12/20 21:57	1
Vinyl acetate	0.500	U	0.500		ug/L			11/12/20 21:57	1
Vinyl chloride	0.200	U	0.200		ug/L			11/12/20 21:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*11/12/20 21:57*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/12/20 21:57*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*11/12/20 21:57*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/12/20 21:57*	*1*

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

Lab Sample ID: LCS 410-65414/5
Matrix: Water
Analysis Batch: 65414

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	4.067		ug/L		81	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.092		ug/L		102	75 - 123
1,1,2-Trichloroethane	5.00	5.075		ug/L		102	80 - 120
1,1-Dichloroethane	5.00	4.571		ug/L		91	74 - 120
1,1-Dichloroethene	5.00	4.216		ug/L		84	80 - 131
1,2-Dichloroethane	5.00	4.289		ug/L		86	69 - 122
1,2-Dichloropropane	5.00	4.993		ug/L		100	80 - 120
2-Butanone	37.5	35.42		ug/L		94	59 - 141
2-Hexanone	25.0	24.80		ug/L		99	52 - 140
4-Methyl-2-pentanone	25.0	24.02		ug/L		96	55 - 140
Acetone	37.5	30.44		ug/L		81	60 - 146
Benzene	5.00	4.742		ug/L		95	80 - 120
Bromodichloromethane	5.00	4.680		ug/L		94	73 - 124
Bromoform	5.00	4.435		ug/L		89	49 - 144
Bromomethane	5.00	4.059		ug/L		81	60 - 136
Carbon disulfide	5.00	4.134		ug/L		83	67 - 130
Carbon tetrachloride	5.00	3.972		ug/L		79	64 - 141
Chlorobenzene	5.00	4.729		ug/L		95	80 - 120
Chloroethane	5.00	4.253		ug/L		85	63 - 120
Chloroform	5.00	4.478		ug/L		90	80 - 120
Chloromethane	5.00	3.792		ug/L		76	56 - 124
cis-1,2-Dichloroethene	5.00	4.921		ug/L		98	80 - 122
cis-1,3-Dichloropropene	5.00	4.850		ug/L		97	67 - 121
Dibromochloromethane	5.00	4.801		ug/L		96	64 - 138
Ethylbenzene	5.00	4.628		ug/L		93	80 - 120
Freon 113	5.00	3.777		ug/L		76	75 - 133
m&p-Xylene	10.0	9.547		ug/L		95	80 - 120
Methylene Chloride	5.00	4.693		ug/L		94	80 - 120
o-Xylene	5.00	4.730		ug/L		95	80 - 120
Styrene	5.00	4.978		ug/L		100	80 - 120
Tetrachloroethene	5.00	4.417		ug/L		88	80 - 120
Toluene	5.00	4.815		ug/L		96	80 - 120
trans-1,2-Dichloroethene	5.00	4.578		ug/L		92	80 - 122
trans-1,3-Dichloropropene	5.00	4.790		ug/L		96	61 - 129
Trichloroethene	5.00	4.553		ug/L		91	80 - 120
Trichlorofluoromethane	5.00	4.127		ug/L		83	62 - 136
Vinyl chloride	5.00	4.048		ug/L		81	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*93*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

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

Lab Sample ID: LCS 410-65414/7
Matrix: Water
Analysis Batch: 65414

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	12.43		ug/L		99	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*93*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-65414/6
Matrix: Water
Analysis Batch: 65414

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	4.120		ug/L		82	78 - 126	1	30
1,1,2,2-Tetrachloroethane			5.00	5.244		ug/L		105	75 - 123	3	30
1,1,2-Trichloroethane			5.00	5.088		ug/L		102	80 - 120	0	30
1,1-Dichloroethane			5.00	4.566		ug/L		91	74 - 120	0	30
1,1-Dichloroethene			5.00	4.231		ug/L		85	80 - 131	0	30
1,2-Dichloroethane			5.00	4.210		ug/L		84	69 - 122	2	30
1,2-Dichloropropane			5.00	5.025		ug/L		100	80 - 120	1	30
2-Butanone			37.5	37.22		ug/L		99	59 - 141	5	30
2-Hexanone			25.0	26.67		ug/L		107	52 - 140	7	30
4-Methyl-2-pentanone			25.0	25.63		ug/L		103	55 - 140	6	30
Acetone			37.5	30.78		ug/L		82	60 - 146	1	30
Benzene			5.00	4.690		ug/L		94	80 - 120	1	30
Bromodichloromethane			5.00	4.668		ug/L		93	73 - 124	0	30
Bromoform			5.00	4.408		ug/L		88	49 - 144	1	30
Bromomethane			5.00	4.022		ug/L		80	60 - 136	1	30
Carbon disulfide			5.00	4.150		ug/L		83	67 - 130	0	30
Carbon tetrachloride			5.00	3.966		ug/L		79	64 - 141	0	30
Chlorobenzene			5.00	4.773		ug/L		95	80 - 120	1	30
Chloroethane			5.00	4.279		ug/L		86	63 - 120	1	30
Chloroform			5.00	4.491		ug/L		90	80 - 120	0	30
Chloromethane			5.00	3.806		ug/L		76	56 - 124	0	30
cis-1,2-Dichloroethene			5.00	4.830		ug/L		97	80 - 122	2	30
cis-1,3-Dichloropropene			5.00	4.866		ug/L		97	67 - 121	0	30
Dibromochloromethane			5.00	4.800		ug/L		96	64 - 138	0	30
Ethylbenzene			5.00	4.652		ug/L		93	80 - 120	1	30
Freon 113			5.00	3.719	*	ug/L		74	75 - 133	2	30
m&p-Xylene			10.0	9.679		ug/L		97	80 - 120	1	30
Methylene Chloride			5.00	4.732		ug/L		95	80 - 120	1	30
o-Xylene			5.00	4.780		ug/L		96	80 - 120	1	30
Styrene			5.00	5.002		ug/L		100	80 - 120	0	30
Tetrachloroethene			5.00	4.442		ug/L		89	80 - 120	1	30
Toluene			5.00	4.846		ug/L		97	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	4.567		ug/L		91	80 - 122	0	30
trans-1,3-Dichloropropene			5.00	4.822		ug/L		96	61 - 129	1	30
Trichloroethene			5.00	4.444		ug/L		89	80 - 120	2	30

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

Lab Sample ID: LCSD 410-65414/6
Matrix: Water
Analysis Batch: 65414

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	4.106		ug/L		82	62 - 136	1	30
Vinyl chloride			5.00	4.012		ug/L		80	60 - 125	1	30

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

Lab Sample ID: LCSD 410-65414/8
Matrix: Water
Analysis Batch: 65414

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	12.53		ug/L		100	38 - 145	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-63129/4
Matrix: Water
Analysis Batch: 63129

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U	0.100		mg/L			11/06/20 15:53	1
Nitrogen, Nitrite	0.100	U	0.100		mg/L			11/06/20 15:53	1

Lab Sample ID: LCS 410-63129/3
Matrix: Water
Analysis Batch: 63129

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.7120		mg/L		95	90 - 110		
Nitrogen, Nitrite			0.750	0.7081		mg/L		94	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-63130/4
Matrix: Water
Analysis Batch: 63130

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/06/20 15:53	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 410-63130/3
Matrix: Water
Analysis Batch: 63130

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	6.910		mg/L		92	90 - 110

Lab Sample ID: MB 410-68882/4
Matrix: Water
Analysis Batch: 68882

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/21/20 05:41	1

Lab Sample ID: LCS 410-68882/3
Matrix: Water
Analysis Batch: 68882

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.398		mg/L		99	90 - 110

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 410-63378/1-A
Matrix: Water
Analysis Batch: 66468

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 63378

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.206	U	0.206		mg/L		11/08/20 09:35	11/16/20 09:47	1

Lab Sample ID: LCS 410-63378/2-A
Matrix: Water
Analysis Batch: 66468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63378

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.402	0.4518		mg/L		112	80 - 120

Lab Sample ID: MB 410-62857/1-A
Matrix: Water
Analysis Batch: 65217

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 62857

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.200	U	0.200		mg/L		11/06/20 05:14	11/12/20 08:35	1

Lab Sample ID: LCS 410-62857/2-A
Matrix: Water
Analysis Batch: 65217

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 62857

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.402	0.4187		mg/L		104	80 - 120

Method: 4500 NH3 D-2011 - Ammonia

Lab Sample ID: MB 410-65596/12
Matrix: Water
Analysis Batch: 65596

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-N	0.240	U	0.240		mg/L			11/12/20 12:37	1

Lab Sample ID: LCS 410-65596/15
Matrix: Water
Analysis Batch: 65596

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia-N			5.00	5.260		mg/L		105	82 - 124		

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-70930/7
Matrix: Water
Analysis Batch: 70930

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			11/25/20 23:02	1

Lab Sample ID: LCS 410-70930/6
Matrix: Water
Analysis Batch: 70930

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	25.66		mg/L		103	91 - 113		

Lab Sample ID: 410-19551-3 MS
Matrix: Water
Analysis Batch: 70930

Client Sample ID: TowerEff-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	1.00	U	10.0	11.07		mg/L		102	91 - 113		

Lab Sample ID: 410-19551-3 DU
Matrix: Water
Analysis Batch: 70930

Client Sample ID: TowerEff-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	1.00	U		1.00	U	mg/L				NC	3

GC/MS VOA

Analysis Batch: 65414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19551-1	TowerInf-1120	Total/NA	Water	8260C LL	
410-19551-2	TowerInD-1120	Total/NA	Water	8260C LL	
410-19551-3	TowerEff-1120	Total/NA	Water	8260C LL	
410-19551-4	TowerEfD-1120	Total/NA	Water	8260C LL	
410-19551-5	Trip Blanks	Total/NA	Water	8260C LL	
MB 410-65414/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-65414/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-65414/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-65414/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-65414/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

HPLC/IC

Analysis Batch: 63129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19551-3	TowerEff-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-63129/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-63129/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 63130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19551-3	TowerEff-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-63130/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-63130/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 68882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19551-1	TowerInf-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-68882/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-68882/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 62857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19551-1	TowerInf-1120	Total Recoverable	Water	3005A	
410-19551-3	TowerEff-1120	Total Recoverable	Water	3005A	
MB 410-62857/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-62857/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 63378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19551-1	TowerInf-1120	Dissolved	Water	Non-Digest Prep	
410-19551-3	TowerEff-1120	Dissolved	Water	Non-Digest Prep	
MB 410-63378/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-63378/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Analysis Batch: 65217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19551-1	TowerInf-1120	Total Recoverable	Water	6010D	62857
410-19551-3	TowerEff-1120	Total Recoverable	Water	6010D	62857
MB 410-62857/1-A	Method Blank	Total Recoverable	Water	6010D	62857

Metals (Continued)

Analysis Batch: 65217 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-62857/2-A	Lab Control Sample	Total Recoverable	Water	6010D	62857

Analysis Batch: 66468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19551-1	TowerInf-1120	Dissolved	Water	6010D	63378
410-19551-3	TowerEff-1120	Dissolved	Water	6010D	63378
MB 410-63378/1-A	Method Blank	Total/NA	Water	6010D	63378
LCS 410-63378/2-A	Lab Control Sample	Total/NA	Water	6010D	63378

General Chemistry

Analysis Batch: 65596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19551-3	TowerEff-1120	Total/NA	Water	4500 NH3 D-2011	
MB 410-65596/12	Method Blank	Total/NA	Water	4500 NH3 D-2011	
LCS 410-65596/15	Lab Control Sample	Total/NA	Water	4500 NH3 D-2011	

Analysis Batch: 70930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19551-1	TowerInf-1120	Total/NA	Water	5310C-2011	
410-19551-3	TowerEff-1120	Total/NA	Water	5310C-2011	
MB 410-70930/7	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-70930/6	Lab Control Sample	Total/NA	Water	5310C-2011	
410-19551-3 MS	TowerEff-1120	Total/NA	Water	5310C-2011	
410-19551-3 DU	TowerEff-1120	Total/NA	Water	5310C-2011	

Lab Chronicle

Client: Landau & Associates, Inc.
Job ID: 410-19551-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: TowerInf-1120
Lab Sample ID: 410-19551-1
Date Collected: 11/04/20 15:25
Matrix: Water
Date Received: 11/05/20 10:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	65414	11/13/20 02:42	UCB5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	68882	11/21/20 10:57	W5UX	ELLE
Dissolved	Prep	Non-Digest Prep			63378	11/08/20 09:35	UJL8	ELLE
Dissolved	Analysis	6010D		1	66468	11/16/20 11:14	SB	ELLE
Total Recoverable	Prep	3005A			62857	11/06/20 05:14	UAMX	ELLE
Total Recoverable	Analysis	6010D		1	65217	11/12/20 09:35	ULJC	ELLE
Total/NA	Analysis	5310C-2011		1	70930	11/26/20 00:12	NKL9	ELLE

Client Sample ID: TowerInD-1120
Lab Sample ID: 410-19551-2
Date Collected: 11/04/20 15:35
Matrix: Water
Date Received: 11/05/20 10:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	65414	11/13/20 03:04	UCB5	ELLE

Client Sample ID: TowerEff-1120
Lab Sample ID: 410-19551-3
Date Collected: 11/04/20 15:00
Matrix: Water
Date Received: 11/05/20 10:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	65414	11/13/20 03:26	UCB5	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	63129	11/06/20 17:35	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	63130	11/06/20 17:35	W5UX	ELLE
Dissolved	Prep	Non-Digest Prep			63378	11/08/20 09:35	UJL8	ELLE
Dissolved	Analysis	6010D		1	66468	11/16/20 11:17	SB	ELLE
Total Recoverable	Prep	3005A			62857	11/06/20 05:14	UAMX	ELLE
Total Recoverable	Analysis	6010D		1	65217	11/12/20 09:38	ULJC	ELLE
Total/NA	Analysis	4500 NH3 D-2011		1	65596	11/12/20 14:47	UML5	ELLE
Total/NA	Analysis	5310C-2011		1	70930	11/25/20 23:16	NKL9	ELLE

Client Sample ID: TowerEfD-1120
Lab Sample ID: 410-19551-4
Date Collected: 11/04/20 15:10
Matrix: Water
Date Received: 11/05/20 10:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	65414	11/13/20 03:48	UCB5	ELLE

Client Sample ID: Trip Blanks
Lab Sample ID: 410-19551-5
Date Collected: 11/04/20 00:00
Matrix: Water
Date Received: 11/05/20 10:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	65414	11/12/20 22:39	UCB5	ELLE

Lab Chronicle

Client: Landau & Associates, Inc.
Job ID: 410-19551-1
Project/Site: Boeing of Portland 0025116.120.412

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: 410-19551-1
Project/Site: Boeing of Portland 0025116.120.412

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 0025116.120.412

Job ID: 410-19551-1

Method	Method Description	Protocol	Laboratory
8260C LL	Volatile Organic Compounds by GC/MS	SW846	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010D	Metals (ICP)	SW846	ELLE
4500 NH3 D-2011	Ammonia	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

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: 410-19551-1
Project/Site: Boeing of Portland 0025116.120.412

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-19551-1	TowerInf-1120	Water	11/04/20 15:25	11/05/20 10:33	
410-19551-2	TowerInD-1120	Water	11/04/20 15:35	11/05/20 10:33	
410-19551-3	TowerEff-1120	Water	11/04/20 15:00	11/05/20 10:33	
410-19551-4	TowerEfD-1120	Water	11/04/20 15:10	11/05/20 10:33	
410-19551-5	Trip Blanks	Water	11/04/20 00:00	11/05/20 10:33	

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-19551 Chain of Custody

onmental use only

orrespond.

1 Client Information

Site Location: Gresham Oregon
Site Project: Boeing of Portland
Site Program/#: 0025116.120.412
Boeing PM: Debbie Taege, John Russell
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL # of Coolers: 1

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	4 Analyses Requested: VOC (38 list)	TOC	Sulfate	Nitrate	Nitrite	Total Iron	Dissolved Iron	Nitrogen, ammonia					5 Remarks/Comments
Tower Inf-1120	11/4/20	1525	H_2O	11 9 -WHL	X	X	X			X	X						Metals QC collected at Inf (2)
Tower InD-1120		1535		3	X												
Tower Eff-1120		1500		10	X	X	X	X	X	X	X	X					
Tower EfD-1120		1510		3	X												
Trip Blanks	—	—		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
Wolfgang Lopez	11/4/20 16:30		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	11/5/2020 1033

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

Temperature upon Receipt: 1.6 °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: 410-19551-1

Login Number: 19551

List Source: Eurofins Lancaster Laboratories Env

List Number: 1

Creator: Rivera-Santa, Julissa

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.	N/A	
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.	True	
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	

eurofins | Environment Testing America



ANALYTICAL REPORT

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

Laboratory Job ID: 410-19569-1
Client Project/Site: Boeing of Portland 0025116.120.412

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

Attn: Evelyn Ives

Kay Hower

Authorized for release by:
12/4/2020 9:15:06 AM

Kay Hower, Principal Project Manager
(717)556-7364
Kay.Hower@eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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. 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. 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.



Kay Hower
Principal Project Manager
12/4/2020 9:15:06 AM

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 6
Detection Summary 8
Client Sample Results 12
Surrogate Summary 36
QC Sample Results 38
QC Association Summary 53
Lab Chronicle 57
Certification Summary 61
Method Summary 62
Sample Summary 63
Chain of Custody 64
Receipt Checklists 65

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.

GC VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

Metals

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

General Chemistry

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

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-19569-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-19569-1

Receipt
The samples were received on 11/5/2020 10:33 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.8º C.

GC/MS VOA
Method 8260C LL: The referenced method allows a maximum of 20% of the analytes in the continuing calibration verification (CCV) associated with batch 410-64920 to exceed the 20% Drift continuing calibration verification criteria. Non-detections of the affected analytes are reported. Any detections are considered estimated.
The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
2-Hexanone	28
4-Methyl-2-pentanone	23

Method 8260C LL: The continuing calibration verification (CCV) associated with batch 410-66213 recovered outside acceptance criteria, low biased, for Bromomethane, Chloroethane, Chloromethane and Vinyl chloride. 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.

Method 8260C LL: The continuing calibration verification (CCV) associated with batch 410-66213 recovered above the upper control limit for Vinyl acetate. Non-detections of the affected analytes are reported. Any detections are considered estimated.

Method 8260C LL: The continuing calibration verification (CCV) associated with batch 410-65898 recovered outside acceptance criteria, low biased, for Bromomethane, Chloroethane, Chloromethane, Trichlorofluoromethane and Vinyl chloride. 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.

Method 8260C LL: The continuing calibration verification (CCV) associated with batch 410-65898 recovered above the upper control limit for Vinyl acetate. 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.

HPLC/IC
Method 300.0: The following sample was analyzed outside of analytical holding time for Nitrogen, Nitrate due to laboratory error: E-12-1120 (410-19569-9).

Method 300.0: The following samples were analyzed outside of analytical holding time for Nitrogen, Nitrate due to laboratory error: E-4-1120 (410-19569-8) and E-15-1120 (410-19569-11).

Method 300.0: The following sample was analyzed outside of analytical holding time for Nitrogen, Nitrate due to laboratory error: E-16-1120 (410-19569-12).

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

GC VOA
Method RSK-175: The continuing calibration verification (CCV) associated with batch 410-62985 recovered above the upper control limit for Acetylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: E-4-1120 (410-19569-8), E-12-1120 (410-19569-9), E-13-1120 (410-19569-10), E-15-1120 (410-19569-11), E-16-1120 (410-19569-12) and DP1-1120 (410-19569-13).

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

Job ID: 410-19569-1 (Continued)

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Conti

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

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

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

Detection Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19569-1

Client Sample ID: BOP-78i-1120 — Lab Sample ID: 410-19569-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	559	E	5.00		ug/L	1		8260C LL	Total/NA
Acetone	20.9		5.00		ug/L	1		8260C LL	Total/NA
Benzene	0.698		0.200		ug/L	1		8260C LL	Total/NA
Chloromethane	1.57		0.500		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	5.83		0.200		ug/L	1		8260C LL	Total/NA
Methylene Chloride	0.574		0.500		ug/L	1		8260C LL	Total/NA
Toluene	0.305		0.200		ug/L	1		8260C LL	Total/NA
trans-1,2-Dichloroethene	0.407		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	12.3		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone - DL	733		50.0		ug/L	10		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	5.30		2.00		ug/L	10		8260C LL	Total/NA
Vinyl chloride - DL	9.62		2.00		ug/L	10		8260C LL	Total/NA

Client Sample ID: BOP-79i-1120 — Lab Sample ID: 410-19569-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	462	E	5.00		ug/L	1		8260C LL	Total/NA
2-Hexanone	617	E	5.00		ug/L	1		8260C LL	Total/NA
Acetone	45.6		5.00		ug/L	1		8260C LL	Total/NA
Benzene	0.977		0.200		ug/L	1		8260C LL	Total/NA
Chloroform	2.82		0.200		ug/L	1		8260C LL	Total/NA
Chloromethane	9.55		0.500		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	2.99		0.200		ug/L	1		8260C LL	Total/NA
Methylene Chloride	0.846		0.500		ug/L	1		8260C LL	Total/NA
Toluene	1.41		0.200		ug/L	1		8260C LL	Total/NA
trans-1,2-Dichloroethene	0.488		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	0.218		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	1.35		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone - DL	457		50.0		ug/L	10		8260C LL	Total/NA
2-Hexanone - DL	572		50.0		ug/L	10		8260C LL	Total/NA
Acetone - DL	54.9		50.0		ug/L	10		8260C LL	Total/NA
Chloroform - DL	2.69		2.00		ug/L	10		8260C LL	Total/NA
Chloromethane - DL	8.17		5.00		ug/L	10		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	2.63		2.00		ug/L	10		8260C LL	Total/NA

Client Sample ID: BOP-84i-1120 — Lab Sample ID: 410-19569-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	239		5.00		ug/L	1		8260C LL	Total/NA
2-Hexanone	28.7		5.00		ug/L	1		8260C LL	Total/NA
Acetone	17.9		5.00		ug/L	1		8260C LL	Total/NA
Benzene	1.02		0.200		ug/L	1		8260C LL	Total/NA
Chloroform	3.87		0.200		ug/L	1		8260C LL	Total/NA
Chloromethane	19.7		0.500		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	2.13		0.200		ug/L	1		8260C LL	Total/NA
Toluene	0.573		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	1.30		0.200		ug/L	1		8260C LL	Total/NA

Client Sample ID: BOP-85i-1120 — Lab Sample ID: 410-19569-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	421	E	5.00		ug/L	1		8260C LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: BOP-85i-1120 (Continued)
Lab Sample ID: 410-19569-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Hexanone	86.0		5.00		ug/L	1		8260C LL	Total/NA
Acetone	56.2		5.00		ug/L	1		8260C LL	Total/NA
Benzene	0.725		0.200		ug/L	1		8260C LL	Total/NA
Chloroform	4.95		0.200		ug/L	1		8260C LL	Total/NA
Chloromethane	40.0	E	0.500		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.403		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone - DL	350		50.0		ug/L	10		8260C LL	Total/NA
2-Hexanone - DL	66.7		50.0		ug/L	10		8260C LL	Total/NA
Acetone - DL	60.8		50.0		ug/L	10		8260C LL	Total/NA
Chloroform - DL	4.56		2.00		ug/L	10		8260C LL	Total/NA
Chloromethane - DL	36.0		5.00		ug/L	10		8260C LL	Total/NA

Client Sample ID: BOP-86i-1120
Lab Sample ID: 410-19569-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	441	E	5.00		ug/L	1		8260C LL	Total/NA
2-Hexanone	24.9		5.00		ug/L	1		8260C LL	Total/NA
Acetone	15.2		5.00		ug/L	1		8260C LL	Total/NA
Benzene	1.08		0.200		ug/L	1		8260C LL	Total/NA
Chloroform	5.99		0.200		ug/L	1		8260C LL	Total/NA
Chloromethane	33.1	E	0.500		ug/L	1		8260C LL	Total/NA
Methylene Chloride	0.515		0.500		ug/L	1		8260C LL	Total/NA
Trichloroethene	0.248		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.488		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone - DL	389		50.0		ug/L	10		8260C LL	Total/NA
Chloroform - DL	5.49		2.00		ug/L	10		8260C LL	Total/NA
Chloromethane - DL	28.7		5.00		ug/L	10		8260C LL	Total/NA

Client Sample ID: BOP-87i-1120
Lab Sample ID: 410-19569-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	2390	E	5.00		ug/L	1		8260C LL	Total/NA
Acetone	9.32		5.00		ug/L	1		8260C LL	Total/NA
Benzene	1.30		0.200		ug/L	1		8260C LL	Total/NA
Chloroform	0.780		0.200		ug/L	1		8260C LL	Total/NA
Chloromethane	6.36		0.500		ug/L	1		8260C LL	Total/NA
Methylene Chloride	0.768		0.500		ug/L	1		8260C LL	Total/NA
Toluene	0.403		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	19.1		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone - DL	3530		250		ug/L	50		8260C LL	Total/NA
Vinyl chloride - DL	12.8		10.0		ug/L	50		8260C LL	Total/NA

Client Sample ID: Trip Blanks
Lab Sample ID: 410-19569-7

No Detections.

Client Sample ID: E-4-1120
Lab Sample ID: 410-19569-8

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	3.41		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	2.11		0.200		ug/L	1		8260C LL	Total/NA
Freon 113	0.544		0.500		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	0.652		0.200		ug/L	1		8260C LL	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: E-4-1120 (Continued) — Lab Sample ID: 410-19569-8

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	19.6		0.200		ug/L	1		8260C LL	Total/NA
Methane (1C)	282		5.00		ug/L	1		RSK-175	Total/NA
Nitrogen, Nitrate	0.280	H	0.100		mg/L	1		EPA 300.0 R2.1	Total/NA
Sulfate	3.58		1.00		mg/L	1		EPA 300.0 R2.1	Total/NA
Iron	0.565		0.200		mg/L	1		6010D	Total Recoverable
Iron	0.230		0.206		mg/L	1		6010D	Dissolved

Client Sample ID: E-12-1120 — Lab Sample ID: 410-19569-9

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	1.31		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	4.55		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	0.247		0.200		ug/L	1		8260C LL	Total/NA
Toluene	0.276		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	9.03		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	1.14		0.200		ug/L	1		8260C LL	Total/NA
Methane (1C)	4250	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	5160		100		ug/L	20		RSK-175	Total/NA
Nitrogen, Nitrate	0.855	H	0.500		mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	7.30		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
Total Organic Carbon	1.23		1.00		mg/L	1		5310C-2011	Total/NA

Client Sample ID: E-13-1120 — Lab Sample ID: 410-19569-10

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	1.56		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	1.33		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	0.384		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	10.5		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.325		0.200		ug/L	1		8260C LL	Total/NA
Methane (1C)	136		5.00		ug/L	1		RSK-175	Total/NA
Nitrogen, Nitrate	2.04	H	0.500		mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	10.0		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA

Client Sample ID: E-15-1120 — Lab Sample ID: 410-19569-11

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.560		0.500		ug/L	1		8260C LL	Total/NA
1,1-Dichloroethene	1.33		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone	5.48		5.00		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	6.31		0.200		ug/L	1		8260C LL	Total/NA
Toluene	14.9		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	1.08		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	4.70		0.200		ug/L	1		8260C LL	Total/NA
Methane (1C)	13100	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	17400		500		ug/L	100		RSK-175	Total/NA
Total Organic Carbon	4.03		1.00		mg/L	1		5310C-2011	Total/NA

Client Sample ID: E-16-1120 — Lab Sample ID: 410-19569-12

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.644		0.200		ug/L	1		8260C LL	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Landau & Associates, Inc.
Job ID: 410-19569-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: E-16-1120 (Continued) — Lab Sample ID: 410-19569-12

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.29		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	1.41		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	1.25		0.200		ug/L	1		8260C LL	Total/NA
Methane (1C)	5080	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	6250		250		ug/L	50		RSK-175	Total/NA
Sulfate	29.0		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
Total Organic Carbon	5.30		5.00		mg/L	5		5310C-2011	Total/NA

Client Sample ID: DP1-1120 — Lab Sample ID: 410-19569-13

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	7.37		5.00		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	1.76		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	2.29		0.200		ug/L	1		8260C LL	Total/NA
Methane (1C)	12100	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	16900		500		ug/L	100		RSK-175	Total/NA
Sulfate	2.90		1.00		mg/L	1		EPA 300.0 R2.1	Total/NA
Total Organic Carbon	30.5		5.00		mg/L	5		5310C-2011	Total/NA

Client Sample ID: Trip Blanks — Lab Sample ID: 410-19569-14

No Detections.

Client Sample ID: BOP-x-1120 — Lab Sample ID: 410-19569-15

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	3.36		0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	2.08		0.200		ug/L	1		8260C LL	Total/NA
Freon 113	0.510		0.500		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	0.678		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	19.7		0.200		ug/L	1		8260C LL	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BOP-78i-1120

Date Collected: 11/03/20 13:46
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-1

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			11/11/20 23:41	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/11/20 23:41	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/11/20 23:41	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/11/20 23:41	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/11/20 23:41	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/11/20 23:41	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/11/20 23:41	1
2-Butanone	**559**	**E**	5.00		ug/L			11/11/20 23:41	1
2-Hexanone	5.00	U	5.00		ug/L			11/11/20 23:41	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/11/20 23:41	1
Acetone	**20.9**		5.00		ug/L			11/11/20 23:41	1
Benzene	**0.698**		0.200		ug/L			11/11/20 23:41	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/11/20 23:41	1
Bromoform	1.00	U	1.00		ug/L			11/11/20 23:41	1
Bromomethane	0.500	U	0.500		ug/L			11/11/20 23:41	1
Carbon disulfide	0.500	U	0.500		ug/L			11/11/20 23:41	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/11/20 23:41	1
Chlorobenzene	0.500	U	0.500		ug/L			11/11/20 23:41	1
Chloroethane	0.500	U	0.500		ug/L			11/11/20 23:41	1
Chloroform	0.200	U	0.200		ug/L			11/11/20 23:41	1
Chloromethane	**1.57**		0.500		ug/L			11/11/20 23:41	1
cis-1,2-Dichloroethene	**5.83**		0.200		ug/L			11/11/20 23:41	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/11/20 23:41	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/11/20 23:41	1
Ethylbenzene	0.500	U	0.500		ug/L			11/11/20 23:41	1
Freon 113	0.500	U	0.500		ug/L			11/11/20 23:41	1
m&p-Xylene	0.500	U	0.500		ug/L			11/11/20 23:41	1
Methylene Chloride	**0.574**		0.500		ug/L			11/11/20 23:41	1
o-Xylene	0.500	U	0.500		ug/L			11/11/20 23:41	1
Styrene	0.500	U	0.500		ug/L			11/11/20 23:41	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/11/20 23:41	1
Toluene	**0.305**		0.200		ug/L			11/11/20 23:41	1
trans-1,2-Dichloroethene	**0.407**		0.200		ug/L			11/11/20 23:41	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/11/20 23:41	1
Trichloroethene	0.200	U	0.200		ug/L			11/11/20 23:41	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/11/20 23:41	1
Vinyl acetate	0.500	U	0.500		ug/L			11/11/20 23:41	1
Vinyl chloride	**12.3**		0.200		ug/L			11/11/20 23:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/11/20 23:41*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/11/20 23:41*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/11/20 23:41*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/11/20 23:41*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.00	U	5.00		ug/L			11/15/20 21:58	10
1,1,2,2-Tetrachloroethane	2.00	U	2.00		ug/L			11/15/20 21:58	10
1,1,2-Trichloroethane	2.00	U	2.00		ug/L			11/15/20 21:58	10

Client Sample ID: BOP-78i-1120
Lab Sample ID: 410-19569-1
Date Collected: 11/03/20 13:46
Matrix: Water
Date Received: 11/05/20 10:33

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	5.00	U	5.00		ug/L			11/15/20 21:58	10
1,1-Dichloroethene	2.00	U	2.00		ug/L			11/15/20 21:58	10
1,2-Dichloroethane	2.00	U	2.00		ug/L			11/15/20 21:58	10
1,2-Dichloropropane	5.00	U	5.00		ug/L			11/15/20 21:58	10
2-Butanone	**733**		50.0		ug/L			11/15/20 21:58	10
2-Hexanone	50.0	U	50.0		ug/L			11/15/20 21:58	10
4-Methyl-2-pentanone	50.0	U	50.0		ug/L			11/15/20 21:58	10
Acetone	50.0	U	50.0		ug/L			11/15/20 21:58	10
Benzene	2.00	U	2.00		ug/L			11/15/20 21:58	10
Bromodichloromethane	5.00	U	5.00		ug/L			11/15/20 21:58	10
Bromoform	10.0	U	10.0		ug/L			11/15/20 21:58	10
Bromomethane	5.00	U	5.00		ug/L			11/15/20 21:58	10
Carbon disulfide	5.00	U	5.00		ug/L			11/15/20 21:58	10
Carbon tetrachloride	2.00	U	2.00		ug/L			11/15/20 21:58	10
Chlorobenzene	5.00	U	5.00		ug/L			11/15/20 21:58	10
Chloroethane	5.00	U	5.00		ug/L			11/15/20 21:58	10
Chloroform	2.00	U	2.00		ug/L			11/15/20 21:58	10
Chloromethane	5.00	U	5.00		ug/L			11/15/20 21:58	10
cis-1,2-Dichloroethene	**5.30**		2.00		ug/L			11/15/20 21:58	10
cis-1,3-Dichloropropene	2.00	U	2.00		ug/L			11/15/20 21:58	10
Dibromochloromethane	5.00	U	5.00		ug/L			11/15/20 21:58	10
Ethylbenzene	5.00	U	5.00		ug/L			11/15/20 21:58	10
Freon 113	5.00	U	5.00		ug/L			11/15/20 21:58	10
m&p-Xylene	5.00	U	5.00		ug/L			11/15/20 21:58	10
Methylene Chloride	5.00	U	5.00		ug/L			11/15/20 21:58	10
o-Xylene	5.00	U	5.00		ug/L			11/15/20 21:58	10
Styrene	5.00	U	5.00		ug/L			11/15/20 21:58	10
Tetrachloroethene	2.00	U	2.00		ug/L			11/15/20 21:58	10
Toluene	2.00	U	2.00		ug/L			11/15/20 21:58	10
trans-1,2-Dichloroethene	2.00	U	2.00		ug/L			11/15/20 21:58	10
trans-1,3-Dichloropropene	2.00	U	2.00		ug/L			11/15/20 21:58	10
Trichloroethene	2.00	U	2.00		ug/L			11/15/20 21:58	10
Trichlorofluoromethane	5.00	U	5.00		ug/L			11/15/20 21:58	10
Vinyl acetate	5.00	U	5.00		ug/L			11/15/20 21:58	10
Vinyl chloride	**9.62**		2.00		ug/L			11/15/20 21:58	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*11/15/20 21:58*	*10*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/15/20 21:58*	*10*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*11/15/20 21:58*	*10*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/15/20 21:58*	*10*

Client Sample ID: BOP-79i-1120
Lab Sample ID: 410-19569-2
Date Collected: 11/03/20 13:28
Matrix: Water
Date Received: 11/05/20 10:33

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			11/12/20 00:03	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/12/20 00:03	1

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19569-1

Client Sample ID: BOP-79i-1120

Date Collected: 11/03/20 13:28
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-2

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/12/20 00:03	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/12/20 00:03	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 00:03	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/12/20 00:03	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/12/20 00:03	1
2-Butanone	**462**	**E**	5.00		ug/L			11/12/20 00:03	1
2-Hexanone	**617**	**E**	5.00		ug/L			11/12/20 00:03	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/12/20 00:03	1
Acetone	**45.6**		5.00		ug/L			11/12/20 00:03	1
Benzene	**0.977**		0.200		ug/L			11/12/20 00:03	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/12/20 00:03	1
Bromoform	1.00	U	1.00		ug/L			11/12/20 00:03	1
Bromomethane	0.500	U	0.500		ug/L			11/12/20 00:03	1
Carbon disulfide	0.500	U	0.500		ug/L			11/12/20 00:03	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/12/20 00:03	1
Chlorobenzene	0.500	U	0.500		ug/L			11/12/20 00:03	1
Chloroethane	0.500	U	0.500		ug/L			11/12/20 00:03	1
Chloroform	**2.82**		0.200		ug/L			11/12/20 00:03	1
Chloromethane	**9.55**		0.500		ug/L			11/12/20 00:03	1
cis-1,2-Dichloroethene	**2.99**		0.200		ug/L			11/12/20 00:03	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 00:03	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/12/20 00:03	1
Ethylbenzene	0.500	U	0.500		ug/L			11/12/20 00:03	1
Freon 113	0.500	U	0.500		ug/L			11/12/20 00:03	1
m&p-Xylene	0.500	U	0.500		ug/L			11/12/20 00:03	1
Methylene Chloride	**0.846**		0.500		ug/L			11/12/20 00:03	1
o-Xylene	0.500	U	0.500		ug/L			11/12/20 00:03	1
Styrene	0.500	U	0.500		ug/L			11/12/20 00:03	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/12/20 00:03	1
Toluene	**1.41**		0.200		ug/L			11/12/20 00:03	1
trans-1,2-Dichloroethene	**0.488**		0.200		ug/L			11/12/20 00:03	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 00:03	1
Trichloroethene	**0.218**		0.200		ug/L			11/12/20 00:03	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/12/20 00:03	1
Vinyl acetate	0.500	U	0.500		ug/L			11/12/20 00:03	1
Vinyl chloride	**1.35**		0.200		ug/L			11/12/20 00:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*		*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*			*11/12/20 00:03*	*1*
Dibromofluoromethane (Surr)	*92*		*80 - 120*			*11/12/20 00:03*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*			*11/12/20 00:03*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*			*11/12/20 00:03*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.00	U	5.00		ug/L			11/13/20 23:26	10
1,1,2,2-Tetrachloroethane	2.00	U	2.00		ug/L			11/13/20 23:26	10
1,1,2-Trichloroethane	2.00	U	2.00		ug/L			11/13/20 23:26	10
1,1-Dichloroethane	5.00	U	5.00		ug/L			11/13/20 23:26	10
1,1-Dichloroethene	2.00	U	2.00		ug/L			11/13/20 23:26	10

Client Sample ID: BOP-79i-1120

Date Collected: 11/03/20 13:28
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-2

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	2.00	U	2.00		ug/L			11/13/20 23:26	10
1,2-Dichloropropane	5.00	U	5.00		ug/L			11/13/20 23:26	10
2-Butanone	**457**		50.0		ug/L			11/13/20 23:26	10
2-Hexanone	**572**		50.0		ug/L			11/13/20 23:26	10
4-Methyl-2-pentanone	50.0	U	50.0		ug/L			11/13/20 23:26	10
Acetone	**54.9**		50.0		ug/L			11/13/20 23:26	10
Benzene	2.00	U	2.00		ug/L			11/13/20 23:26	10
Bromodichloromethane	5.00	U	5.00		ug/L			11/13/20 23:26	10
Bromoform	10.0	U	10.0		ug/L			11/13/20 23:26	10
Bromomethane	5.00	U	5.00		ug/L			11/13/20 23:26	10
Carbon disulfide	5.00	U	5.00		ug/L			11/13/20 23:26	10
Carbon tetrachloride	2.00	U	2.00		ug/L			11/13/20 23:26	10
Chlorobenzene	5.00	U	5.00		ug/L			11/13/20 23:26	10
Chloroethane	5.00	U	5.00		ug/L			11/13/20 23:26	10
Chloroform	**2.69**		2.00		ug/L			11/13/20 23:26	10
Chloromethane	**8.17**		5.00		ug/L			11/13/20 23:26	10
cis-1,2-Dichloroethene	**2.63**		2.00		ug/L			11/13/20 23:26	10
cis-1,3-Dichloropropene	2.00	U	2.00		ug/L			11/13/20 23:26	10
Dibromochloromethane	5.00	U	5.00		ug/L			11/13/20 23:26	10
Ethylbenzene	5.00	U	5.00		ug/L			11/13/20 23:26	10
Freon 113	5.00	U	5.00		ug/L			11/13/20 23:26	10
m&p-Xylene	5.00	U	5.00		ug/L			11/13/20 23:26	10
Methylene Chloride	5.00	U	5.00		ug/L			11/13/20 23:26	10
o-Xylene	5.00	U	5.00		ug/L			11/13/20 23:26	10
Styrene	5.00	U	5.00		ug/L			11/13/20 23:26	10
Tetrachloroethene	2.00	U	2.00		ug/L			11/13/20 23:26	10
Toluene	2.00	U	2.00		ug/L			11/13/20 23:26	10
trans-1,2-Dichloroethene	2.00	U	2.00		ug/L			11/13/20 23:26	10
trans-1,3-Dichloropropene	2.00	U	2.00		ug/L			11/13/20 23:26	10
Trichloroethene	2.00	U	2.00		ug/L			11/13/20 23:26	10
Trichlorofluoromethane	5.00	U	5.00		ug/L			11/13/20 23:26	10
Vinyl acetate	5.00	U	5.00		ug/L			11/13/20 23:26	10
Vinyl chloride	2.00	U	2.00		ug/L			11/13/20 23:26	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*11/13/20 23:26*	*10*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/13/20 23:26*	*10*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*11/13/20 23:26*	*10*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/13/20 23:26*	*10*

Client Sample ID: BOP-84i-1120

Date Collected: 11/03/20 15:01
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-3

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			11/12/20 02:37	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/12/20 02:37	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/12/20 02:37	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/12/20 02:37	1

Client Sample ID: BOP-84i-1120
Lab Sample ID: 410-19569-3

Date Collected: 11/03/20 15:01
Matrix: Water
Date Received: 11/05/20 10:33

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 02:37	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/12/20 02:37	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/12/20 02:37	1
2-Butanone	**239**		5.00		ug/L			11/12/20 02:37	1
2-Hexanone	**28.7**		5.00		ug/L			11/12/20 02:37	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/12/20 02:37	1
Acetone	**17.9**		5.00		ug/L			11/12/20 02:37	1
Benzene	**1.02**		0.200		ug/L			11/12/20 02:37	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/12/20 02:37	1
Bromoform	1.00	U	1.00		ug/L			11/12/20 02:37	1
Bromomethane	0.500	U	0.500		ug/L			11/12/20 02:37	1
Carbon disulfide	0.500	U	0.500		ug/L			11/12/20 02:37	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/12/20 02:37	1
Chlorobenzene	0.500	U	0.500		ug/L			11/12/20 02:37	1
Chloroethane	0.500	U	0.500		ug/L			11/12/20 02:37	1
Chloroform	**3.87**		0.200		ug/L			11/12/20 02:37	1
Chloromethane	**19.7**		0.500		ug/L			11/12/20 02:37	1
cis-1,2-Dichloroethene	**2.13**		0.200		ug/L			11/12/20 02:37	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 02:37	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/12/20 02:37	1
Ethylbenzene	0.500	U	0.500		ug/L			11/12/20 02:37	1
Freon 113	0.500	U	0.500		ug/L			11/12/20 02:37	1
m&p-Xylene	0.500	U	0.500		ug/L			11/12/20 02:37	1
Methylene Chloride	0.500	U	0.500		ug/L			11/12/20 02:37	1
o-Xylene	0.500	U	0.500		ug/L			11/12/20 02:37	1
Styrene	0.500	U	0.500		ug/L			11/12/20 02:37	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/12/20 02:37	1
Toluene	**0.573**		0.200		ug/L			11/12/20 02:37	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 02:37	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 02:37	1
Trichloroethene	0.200	U	0.200		ug/L			11/12/20 02:37	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/12/20 02:37	1
Vinyl acetate	0.500	U	0.500		ug/L			11/12/20 02:37	1
Vinyl chloride	**1.30**		0.200		ug/L			11/12/20 02:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/12/20 02:37*	*1*
Dibromofluoromethane (Surr)	*91*		*80 - 120*		*11/12/20 02:37*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/12/20 02:37*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/12/20 02:37*	*1*

Client Sample ID: BOP-85i-1120
Lab Sample ID: 410-19569-4

Date Collected: 11/03/20 14:23
Matrix: Water
Date Received: 11/05/20 10:33

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			11/12/20 03:21	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/12/20 03:21	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/12/20 03:21	1

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19569-1

Client Sample ID: BOP-85i-1120

Date Collected: 11/03/20 14:23
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-4

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/12/20 03:21	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 03:21	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/12/20 03:21	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/12/20 03:21	1
2-Butanone	**421**	**E**	5.00		ug/L			11/12/20 03:21	1
2-Hexanone	**86.0**		5.00		ug/L			11/12/20 03:21	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/12/20 03:21	1
Acetone	**56.2**		5.00		ug/L			11/12/20 03:21	1
Benzene	**0.725**		0.200		ug/L			11/12/20 03:21	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/12/20 03:21	1
Bromoform	1.00	U	1.00		ug/L			11/12/20 03:21	1
Bromomethane	0.500	U	0.500		ug/L			11/12/20 03:21	1
Carbon disulfide	0.500	U	0.500		ug/L			11/12/20 03:21	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/12/20 03:21	1
Chlorobenzene	0.500	U	0.500		ug/L			11/12/20 03:21	1
Chloroethane	0.500	U	0.500		ug/L			11/12/20 03:21	1
Chloroform	**4.95**		0.200		ug/L			11/12/20 03:21	1
Chloromethane	**40.0**	**E**	0.500		ug/L			11/12/20 03:21	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 03:21	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 03:21	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/12/20 03:21	1
Ethylbenzene	0.500	U	0.500		ug/L			11/12/20 03:21	1
Freon 113	0.500	U	0.500		ug/L			11/12/20 03:21	1
m&p-Xylene	0.500	U	0.500		ug/L			11/12/20 03:21	1
Methylene Chloride	0.500	U	0.500		ug/L			11/12/20 03:21	1
o-Xylene	0.500	U	0.500		ug/L			11/12/20 03:21	1
Styrene	0.500	U	0.500		ug/L			11/12/20 03:21	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/12/20 03:21	1
Toluene	0.200	U	0.200		ug/L			11/12/20 03:21	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 03:21	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 03:21	1
Trichloroethene	0.200	U	0.200		ug/L			11/12/20 03:21	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/12/20 03:21	1
Vinyl acetate	0.500	U	0.500		ug/L			11/12/20 03:21	1
Vinyl chloride	**0.403**		0.200		ug/L			11/12/20 03:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/12/20 03:21*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/12/20 03:21*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/12/20 03:21*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/12/20 03:21*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.00	U	5.00		ug/L			11/12/20 03:43	10
1,1,2,2-Tetrachloroethane	2.00	U	2.00		ug/L			11/12/20 03:43	10
1,1,2-Trichloroethane	2.00	U	2.00		ug/L			11/12/20 03:43	10
1,1-Dichloroethane	5.00	U	5.00		ug/L			11/12/20 03:43	10
1,1-Dichloroethene	2.00	U	2.00		ug/L			11/12/20 03:43	10
1,2-Dichloroethane	2.00	U	2.00		ug/L			11/12/20 03:43	10

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19569-1

Client Sample ID: BOP-85i-1120

Lab Sample ID: 410-19569-4

Date Collected: 11/03/20 14:23

Matrix: Water

Date Received: 11/05/20 10:33

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	5.00	U	5.00		ug/L			11/12/20 03:43	10
2-Butanone	**350**		50.0		ug/L			11/12/20 03:43	10
2-Hexanone	**66.7**		50.0		ug/L			11/12/20 03:43	10
4-Methyl-2-pentanone	50.0	U	50.0		ug/L			11/12/20 03:43	10
Acetone	**60.8**		50.0		ug/L			11/12/20 03:43	10
Benzene	2.00	U	2.00		ug/L			11/12/20 03:43	10
Bromodichloromethane	5.00	U	5.00		ug/L			11/12/20 03:43	10
Bromoform	10.0	U	10.0		ug/L			11/12/20 03:43	10
Bromomethane	5.00	U	5.00		ug/L			11/12/20 03:43	10
Carbon disulfide	5.00	U	5.00		ug/L			11/12/20 03:43	10
Carbon tetrachloride	2.00	U	2.00		ug/L			11/12/20 03:43	10
Chlorobenzene	5.00	U	5.00		ug/L			11/12/20 03:43	10
Chloroethane	5.00	U	5.00		ug/L			11/12/20 03:43	10
Chloroform	**4.56**		2.00		ug/L			11/12/20 03:43	10
Chloromethane	**36.0**		5.00		ug/L			11/12/20 03:43	10
cis-1,2-Dichloroethene	2.00	U	2.00		ug/L			11/12/20 03:43	10
cis-1,3-Dichloropropene	2.00	U	2.00		ug/L			11/12/20 03:43	10
Dibromochloromethane	5.00	U	5.00		ug/L			11/12/20 03:43	10
Ethylbenzene	5.00	U	5.00		ug/L			11/12/20 03:43	10
Freon 113	5.00	U	5.00		ug/L			11/12/20 03:43	10
m&p-Xylene	5.00	U	5.00		ug/L			11/12/20 03:43	10
Methylene Chloride	5.00	U	5.00		ug/L			11/12/20 03:43	10
o-Xylene	5.00	U	5.00		ug/L			11/12/20 03:43	10
Styrene	5.00	U	5.00		ug/L			11/12/20 03:43	10
Tetrachloroethene	2.00	U	2.00		ug/L			11/12/20 03:43	10
Toluene	2.00	U	2.00		ug/L			11/12/20 03:43	10
trans-1,2-Dichloroethene	2.00	U	2.00		ug/L			11/12/20 03:43	10
trans-1,3-Dichloropropene	2.00	U	2.00		ug/L			11/12/20 03:43	10
Trichloroethene	2.00	U	2.00		ug/L			11/12/20 03:43	10
Trichlorofluoromethane	5.00	U	5.00		ug/L			11/12/20 03:43	10
Vinyl acetate	5.00	U	5.00		ug/L			11/12/20 03:43	10
Vinyl chloride	2.00	U	2.00		ug/L			11/12/20 03:43	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/12/20 03:43*	*10*
Dibromofluoromethane (Surr)	*92*		*80 - 120*		*11/12/20 03:43*	*10*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/12/20 03:43*	*10*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/12/20 03:43*	*10*

Client Sample ID: BOP-86i-1120

Lab Sample ID: 410-19569-5

Date Collected: 11/03/20 14:41

Matrix: Water

Date Received: 11/05/20 10:33

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			11/12/20 04:05	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/12/20 04:05	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/12/20 04:05	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/12/20 04:05	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 04:05	1

Client Sample ID: BOP-86i-1120

Date Collected: 11/03/20 14:41
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-5

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/12/20 04:05	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/12/20 04:05	1
2-Butanone	**441**	**E**	5.00		ug/L			11/12/20 04:05	1
2-Hexanone	**24.9**		5.00		ug/L			11/12/20 04:05	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/12/20 04:05	1
Acetone	**15.2**		5.00		ug/L			11/12/20 04:05	1
Benzene	**1.08**		0.200		ug/L			11/12/20 04:05	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/12/20 04:05	1
Bromoform	1.00	U	1.00		ug/L			11/12/20 04:05	1
Bromomethane	0.500	U	0.500		ug/L			11/12/20 04:05	1
Carbon disulfide	0.500	U	0.500		ug/L			11/12/20 04:05	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/12/20 04:05	1
Chlorobenzene	0.500	U	0.500		ug/L			11/12/20 04:05	1
Chloroethane	0.500	U	0.500		ug/L			11/12/20 04:05	1
Chloroform	**5.99**		0.200		ug/L			11/12/20 04:05	1
Chloromethane	**33.1**	**E**	0.500		ug/L			11/12/20 04:05	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 04:05	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 04:05	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/12/20 04:05	1
Ethylbenzene	0.500	U	0.500		ug/L			11/12/20 04:05	1
Freon 113	0.500	U	0.500		ug/L			11/12/20 04:05	1
m&p-Xylene	0.500	U	0.500		ug/L			11/12/20 04:05	1
Methylene Chloride	**0.515**		0.500		ug/L			11/12/20 04:05	1
o-Xylene	0.500	U	0.500		ug/L			11/12/20 04:05	1
Styrene	0.500	U	0.500		ug/L			11/12/20 04:05	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/12/20 04:05	1
Toluene	0.200	U	0.200		ug/L			11/12/20 04:05	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 04:05	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 04:05	1
Trichloroethene	**0.248**		0.200		ug/L			11/12/20 04:05	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/12/20 04:05	1
Vinyl acetate	0.500	U	0.500		ug/L			11/12/20 04:05	1
Vinyl chloride	**0.488**		0.200		ug/L			11/12/20 04:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/12/20 04:05*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*11/12/20 04:05*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/12/20 04:05*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/12/20 04:05*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.00	U	5.00		ug/L			11/12/20 04:28	10
1,1,2,2-Tetrachloroethane	2.00	U	2.00		ug/L			11/12/20 04:28	10
1,1,2-Trichloroethane	2.00	U	2.00		ug/L			11/12/20 04:28	10
1,1-Dichloroethane	5.00	U	5.00		ug/L			11/12/20 04:28	10
1,1-Dichloroethene	2.00	U	2.00		ug/L			11/12/20 04:28	10
1,2-Dichloroethane	2.00	U	2.00		ug/L			11/12/20 04:28	10
1,2-Dichloropropane	5.00	U	5.00		ug/L			11/12/20 04:28	10
2-Butanone	**389**		50.0		ug/L			11/12/20 04:28	10

Client Sample ID: BOP-86i-1120

Date Collected: 11/03/20 14:41
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-5

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	50.0	U	50.0		ug/L			11/12/20 04:28	10
4-Methyl-2-pentanone	50.0	U	50.0		ug/L			11/12/20 04:28	10
Acetone	50.0	U	50.0		ug/L			11/12/20 04:28	10
Benzene	2.00	U	2.00		ug/L			11/12/20 04:28	10
Bromodichloromethane	5.00	U	5.00		ug/L			11/12/20 04:28	10
Bromoform	10.0	U	10.0		ug/L			11/12/20 04:28	10
Bromomethane	5.00	U	5.00		ug/L			11/12/20 04:28	10
Carbon disulfide	5.00	U	5.00		ug/L			11/12/20 04:28	10
Carbon tetrachloride	2.00	U	2.00		ug/L			11/12/20 04:28	10
Chlorobenzene	5.00	U	5.00		ug/L			11/12/20 04:28	10
Chloroethane	5.00	U	5.00		ug/L			11/12/20 04:28	10
Chloroform	**5.49**		2.00		ug/L			11/12/20 04:28	10
Chloromethane	**28.7**		5.00		ug/L			11/12/20 04:28	10
cis-1,2-Dichloroethene	2.00	U	2.00		ug/L			11/12/20 04:28	10
cis-1,3-Dichloropropene	2.00	U	2.00		ug/L			11/12/20 04:28	10
Dibromochloromethane	5.00	U	5.00		ug/L			11/12/20 04:28	10
Ethylbenzene	5.00	U	5.00		ug/L			11/12/20 04:28	10
Freon 113	5.00	U	5.00		ug/L			11/12/20 04:28	10
m&p-Xylene	5.00	U	5.00		ug/L			11/12/20 04:28	10
Methylene Chloride	5.00	U	5.00		ug/L			11/12/20 04:28	10
o-Xylene	5.00	U	5.00		ug/L			11/12/20 04:28	10
Styrene	5.00	U	5.00		ug/L			11/12/20 04:28	10
Tetrachloroethene	2.00	U	2.00		ug/L			11/12/20 04:28	10
Toluene	2.00	U	2.00		ug/L			11/12/20 04:28	10
trans-1,2-Dichloroethene	2.00	U	2.00		ug/L			11/12/20 04:28	10
trans-1,3-Dichloropropene	2.00	U	2.00		ug/L			11/12/20 04:28	10
Trichloroethene	2.00	U	2.00		ug/L			11/12/20 04:28	10
Trichlorofluoromethane	5.00	U	5.00		ug/L			11/12/20 04:28	10
Vinyl acetate	5.00	U	5.00		ug/L			11/12/20 04:28	10
Vinyl chloride	2.00	U	2.00		ug/L			11/12/20 04:28	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*11/12/20 04:28*	*10*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/12/20 04:28*	*10*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/12/20 04:28*	*10*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/12/20 04:28*	*10*

Client Sample ID: BOP-87i-1120

Date Collected: 11/03/20 14:12
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-6

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			11/12/20 04:50	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/12/20 04:50	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/12/20 04:50	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/12/20 04:50	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 04:50	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/12/20 04:50	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/12/20 04:50	1

Client Sample ID: BOP-87i-1120
Date Collected: 11/03/20 14:12
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-6
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone	**2390**	**E**	5.00		ug/L			11/12/20 04:50	1
2-Hexanone	5.00	U	5.00		ug/L			11/12/20 04:50	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/12/20 04:50	1
Acetone	**9.32**		5.00		ug/L			11/12/20 04:50	1
Benzene	**1.30**		0.200		ug/L			11/12/20 04:50	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/12/20 04:50	1
Bromoform	1.00	U	1.00		ug/L			11/12/20 04:50	1
Bromomethane	0.500	U	0.500		ug/L			11/12/20 04:50	1
Carbon disulfide	0.500	U	0.500		ug/L			11/12/20 04:50	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/12/20 04:50	1
Chlorobenzene	0.500	U	0.500		ug/L			11/12/20 04:50	1
Chloroethane	0.500	U	0.500		ug/L			11/12/20 04:50	1
Chloroform	**0.780**		0.200		ug/L			11/12/20 04:50	1
Chloromethane	**6.36**		0.500		ug/L			11/12/20 04:50	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 04:50	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 04:50	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/12/20 04:50	1
Ethylbenzene	0.500	U	0.500		ug/L			11/12/20 04:50	1
Freon 113	0.500	U	0.500		ug/L			11/12/20 04:50	1
m&p-Xylene	0.500	U	0.500		ug/L			11/12/20 04:50	1
Methylene Chloride	**0.768**		0.500		ug/L			11/12/20 04:50	1
o-Xylene	0.500	U	0.500		ug/L			11/12/20 04:50	1
Styrene	0.500	U	0.500		ug/L			11/12/20 04:50	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/12/20 04:50	1
Toluene	**0.403**		0.200		ug/L			11/12/20 04:50	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 04:50	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 04:50	1
Trichloroethene	0.200	U	0.200		ug/L			11/12/20 04:50	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/12/20 04:50	1
Vinyl acetate	0.500	U	0.500		ug/L			11/12/20 04:50	1
Vinyl chloride	**19.1**		0.200		ug/L			11/12/20 04:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*11/12/20 04:50*	*1*
Dibromofluoromethane (Surr)	*91*		*80 - 120*		*11/12/20 04:50*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/12/20 04:50*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/12/20 04:50*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	25.0	U	25.0		ug/L			11/13/20 23:48	50
1,1,2,2-Tetrachloroethane	10.0	U	10.0		ug/L			11/13/20 23:48	50
1,1,2-Trichloroethane	10.0	U	10.0		ug/L			11/13/20 23:48	50
1,1-Dichloroethane	25.0	U	25.0		ug/L			11/13/20 23:48	50
1,1-Dichloroethene	10.0	U	10.0		ug/L			11/13/20 23:48	50
1,2-Dichloroethane	10.0	U	10.0		ug/L			11/13/20 23:48	50
1,2-Dichloropropane	25.0	U	25.0		ug/L			11/13/20 23:48	50
2-Butanone	**3530**		250		ug/L			11/13/20 23:48	50
2-Hexanone	250	U	250		ug/L			11/13/20 23:48	50
4-Methyl-2-pentanone	250	U	250		ug/L			11/13/20 23:48	50

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19569-1

Client Sample ID: BOP-87i-1120

Lab Sample ID: 410-19569-6

Date Collected: 11/03/20 14:12
Date Received: 11/05/20 10:33

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetone	250	U	250		ug/L			11/13/20 23:48	50
Benzene	10.0	U	10.0		ug/L			11/13/20 23:48	50
Bromodichloromethane	25.0	U	25.0		ug/L			11/13/20 23:48	50
Bromoform	50.0	U	50.0		ug/L			11/13/20 23:48	50
Bromomethane	25.0	U	25.0		ug/L			11/13/20 23:48	50
Carbon disulfide	25.0	U	25.0		ug/L			11/13/20 23:48	50
Carbon tetrachloride	10.0	U	10.0		ug/L			11/13/20 23:48	50
Chlorobenzene	25.0	U	25.0		ug/L			11/13/20 23:48	50
Chloroethane	25.0	U	25.0		ug/L			11/13/20 23:48	50
Chloroform	10.0	U	10.0		ug/L			11/13/20 23:48	50
Chloromethane	25.0	U	25.0		ug/L			11/13/20 23:48	50
cis-1,2-Dichloroethene	10.0	U	10.0		ug/L			11/13/20 23:48	50
cis-1,3-Dichloropropene	10.0	U	10.0		ug/L			11/13/20 23:48	50
Dibromochloromethane	25.0	U	25.0		ug/L			11/13/20 23:48	50
Ethylbenzene	25.0	U	25.0		ug/L			11/13/20 23:48	50
Freon 113	25.0	U	25.0		ug/L			11/13/20 23:48	50
m&p-Xylene	25.0	U	25.0		ug/L			11/13/20 23:48	50
Methylene Chloride	25.0	U	25.0		ug/L			11/13/20 23:48	50
o-Xylene	25.0	U	25.0		ug/L			11/13/20 23:48	50
Styrene	25.0	U	25.0		ug/L			11/13/20 23:48	50
Tetrachloroethene	10.0	U	10.0		ug/L			11/13/20 23:48	50
Toluene	10.0	U	10.0		ug/L			11/13/20 23:48	50
trans-1,2-Dichloroethene	10.0	U	10.0		ug/L			11/13/20 23:48	50
trans-1,3-Dichloropropene	10.0	U	10.0		ug/L			11/13/20 23:48	50
Trichloroethene	10.0	U	10.0		ug/L			11/13/20 23:48	50
Trichlorofluoromethane	25.0	U	25.0		ug/L			11/13/20 23:48	50
Vinyl acetate	25.0	U	25.0		ug/L			11/13/20 23:48	50
Vinyl chloride	**12.8**		10.0		ug/L			11/13/20 23:48	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*11/13/20 23:48*	*50*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*11/13/20 23:48*	*50*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*11/13/20 23:48*	*50*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/13/20 23:48*	*50*

Client Sample ID: Trip Blanks

Lab Sample ID: 410-19569-7

Date Collected: 11/03/20 00:00
Date Received: 11/05/20 10:33

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			11/11/20 22:57	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/11/20 22:57	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/11/20 22:57	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/11/20 22:57	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/11/20 22:57	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/11/20 22:57	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/11/20 22:57	1
2-Butanone	5.00	U	5.00		ug/L			11/11/20 22:57	1
2-Hexanone	5.00	U	5.00		ug/L			11/11/20 22:57	1

Client Sample ID: Trip Blanks

Date Collected: 11/03/20 00:00
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-7
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/11/20 22:57	1
Acetone	5.00	U	5.00		ug/L			11/11/20 22:57	1
Benzene	0.200	U	0.200		ug/L			11/11/20 22:57	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/11/20 22:57	1
Bromoform	1.00	U	1.00		ug/L			11/11/20 22:57	1
Bromomethane	0.500	U	0.500		ug/L			11/11/20 22:57	1
Carbon disulfide	0.500	U	0.500		ug/L			11/11/20 22:57	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/11/20 22:57	1
Chlorobenzene	0.500	U	0.500		ug/L			11/11/20 22:57	1
Chloroethane	0.500	U	0.500		ug/L			11/11/20 22:57	1
Chloroform	0.200	U	0.200		ug/L			11/11/20 22:57	1
Chloromethane	0.500	U	0.500		ug/L			11/11/20 22:57	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/11/20 22:57	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/11/20 22:57	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/11/20 22:57	1
Ethylbenzene	0.500	U	0.500		ug/L			11/11/20 22:57	1
Freon 113	0.500	U	0.500		ug/L			11/11/20 22:57	1
m&p-Xylene	0.500	U	0.500		ug/L			11/11/20 22:57	1
Methylene Chloride	0.500	U	0.500		ug/L			11/11/20 22:57	1
o-Xylene	0.500	U	0.500		ug/L			11/11/20 22:57	1
Styrene	0.500	U	0.500		ug/L			11/11/20 22:57	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/11/20 22:57	1
Toluene	0.200	U	0.200		ug/L			11/11/20 22:57	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/11/20 22:57	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/11/20 22:57	1
Trichloroethene	0.200	U	0.200		ug/L			11/11/20 22:57	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/11/20 22:57	1
Vinyl acetate	0.500	U	0.500		ug/L			11/11/20 22:57	1
Vinyl chloride	0.200	U	0.200		ug/L			11/11/20 22:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*11/11/20 22:57*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/11/20 22:57*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*11/11/20 22:57*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/11/20 22:57*	*1*

Client Sample ID: E-4-1120

Date Collected: 11/04/20 11:25
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-8
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			11/12/20 00:25	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/12/20 00:25	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/12/20 00:25	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/12/20 00:25	1
1,1-Dichloroethene	**3.41**		0.200		ug/L			11/12/20 00:25	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/12/20 00:25	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/12/20 00:25	1
2-Butanone	5.00	U	5.00		ug/L			11/12/20 00:25	1

Client Sample ID: E-4-1120

Date Collected: 11/04/20 11:25
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-8

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	5.00	U	5.00		ug/L			11/12/20 00:25	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/12/20 00:25	1
Acetone	5.00	U	5.00		ug/L			11/12/20 00:25	1
Benzene	0.200	U	0.200		ug/L			11/12/20 00:25	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/12/20 00:25	1
Bromoform	1.00	U	1.00		ug/L			11/12/20 00:25	1
Bromomethane	0.500	U	0.500		ug/L			11/12/20 00:25	1
Carbon disulfide	0.500	U	0.500		ug/L			11/12/20 00:25	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/12/20 00:25	1
Chlorobenzene	0.500	U	0.500		ug/L			11/12/20 00:25	1
Chloroethane	0.500	U	0.500		ug/L			11/12/20 00:25	1
Chloroform	0.200	U	0.200		ug/L			11/12/20 00:25	1
Chloromethane	0.500	U	0.500		ug/L			11/12/20 00:25	1
cis-1,2-Dichloroethene	**2.11**		0.200		ug/L			11/12/20 00:25	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 00:25	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/12/20 00:25	1
Ethylbenzene	0.500	U	0.500		ug/L			11/12/20 00:25	1
Freon 113	**0.544**		0.500		ug/L			11/12/20 00:25	1
m&p-Xylene	0.500	U	0.500		ug/L			11/12/20 00:25	1
Methylene Chloride	0.500	U	0.500		ug/L			11/12/20 00:25	1
o-Xylene	0.500	U	0.500		ug/L			11/12/20 00:25	1
Styrene	0.500	U	0.500		ug/L			11/12/20 00:25	1
Tetrachloroethene	**0.652**		0.200		ug/L			11/12/20 00:25	1
Toluene	0.200	U	0.200		ug/L			11/12/20 00:25	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 00:25	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 00:25	1
Trichloroethene	**19.6**		0.200		ug/L			11/12/20 00:25	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/12/20 00:25	1
Vinyl acetate	0.500	U	0.500		ug/L			11/12/20 00:25	1
Vinyl chloride	0.200	U	0.200		ug/L			11/12/20 00:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*11/12/20 00:25*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/12/20 00:25*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/12/20 00:25*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/12/20 00:25*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 12:06	1
Ethane (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 12:06	1
Ethene (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 12:06	1
Methane (1C)	**282**		5.00		ug/L		11/06/20 08:43	11/06/20 12:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*83*		*28 - 140*	*11/06/20 08:43*	*11/06/20 12:06*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**0.280**	**H**	0.100		mg/L			11/21/20 16:41	1

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19569-1

Client Sample ID: E-4-1120

Lab Sample ID: 410-19569-8

Date Collected: 11/04/20 11:25
Date Received: 11/05/20 10:33

Matrix: Water

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**3.58**		1.00		mg/L			11/21/20 16:41	1

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.565**		0.200		mg/L		11/06/20 05:14	11/12/20 09:42	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.230**		0.206		mg/L		11/08/20 09:35	11/16/20 11:10	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			12/01/20 12:58	1

Client Sample ID: E-12-1120

Lab Sample ID: 410-19569-9

Date Collected: 11/04/20 13:59
Date Received: 11/05/20 10:33

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			11/12/20 00:47	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/12/20 00:47	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/12/20 00:47	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/12/20 00:47	1
1,1-Dichloroethene	**1.31**		0.200		ug/L			11/12/20 00:47	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/12/20 00:47	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/12/20 00:47	1
2-Butanone	5.00	U	5.00		ug/L			11/12/20 00:47	1
2-Hexanone	5.00	U	5.00		ug/L			11/12/20 00:47	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/12/20 00:47	1
Acetone	5.00	U	5.00		ug/L			11/12/20 00:47	1
Benzene	0.200	U	0.200		ug/L			11/12/20 00:47	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/12/20 00:47	1
Bromoform	1.00	U	1.00		ug/L			11/12/20 00:47	1
Bromomethane	0.500	U	0.500		ug/L			11/12/20 00:47	1
Carbon disulfide	0.500	U	0.500		ug/L			11/12/20 00:47	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/12/20 00:47	1
Chlorobenzene	0.500	U	0.500		ug/L			11/12/20 00:47	1
Chloroethane	0.500	U	0.500		ug/L			11/12/20 00:47	1
Chloroform	0.200	U	0.200		ug/L			11/12/20 00:47	1
Chloromethane	0.500	U	0.500		ug/L			11/12/20 00:47	1
cis-1,2-Dichloroethene	**4.55**		0.200		ug/L			11/12/20 00:47	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 00:47	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/12/20 00:47	1
Ethylbenzene	0.500	U	0.500		ug/L			11/12/20 00:47	1
Freon 113	0.500	U	0.500		ug/L			11/12/20 00:47	1
m&p-Xylene	0.500	U	0.500		ug/L			11/12/20 00:47	1
Methylene Chloride	0.500	U	0.500		ug/L			11/12/20 00:47	1
o-Xylene	0.500	U	0.500		ug/L			11/12/20 00:47	1
Styrene	0.500	U	0.500		ug/L			11/12/20 00:47	1
Tetrachloroethene	**0.247**		0.200		ug/L			11/12/20 00:47	1

Client Sample ID: E-12-1120

Date Collected: 11/04/20 13:59
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-9

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**0.276**		0.200		ug/L			11/12/20 00:47	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 00:47	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 00:47	1
Trichloroethene	**9.03**		0.200		ug/L			11/12/20 00:47	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/12/20 00:47	1
Vinyl acetate	0.500	U	0.500		ug/L			11/12/20 00:47	1
Vinyl chloride	**1.14**		0.200		ug/L			11/12/20 00:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*11/12/20 00:47*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*11/12/20 00:47*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/12/20 00:47*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/12/20 00:47*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 12:25	1
Ethane (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 12:25	1
Ethene (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 12:25	1
Methane (1C)	**4250**	**E**	5.00		ug/L		11/06/20 08:43	11/06/20 12:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*91*		*28 - 140*	*11/06/20 08:43*	*11/06/20 12:25*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	100	U	100		ug/L		11/10/20 08:59	11/10/20 12:59	20
Ethane (1C)	100	U	100		ug/L		11/10/20 08:59	11/10/20 12:59	20
Ethene (1C)	100	U	100		ug/L		11/10/20 08:59	11/10/20 12:59	20
Methane (1C)	**5160**		100		ug/L		11/10/20 08:59	11/10/20 12:59	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*100*		*28 - 140*	*11/10/20 08:59*	*11/10/20 12:59*	*20*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**0.855**	**H**	0.500		mg/L			11/06/20 19:01	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**7.30**		5.00		mg/L			11/06/20 19:01	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1.23**		1.00		mg/L			12/02/20 01:43	1

Client: Landau & Associates, Inc.
Job ID: 410-19569-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: E-13-1120
Date Collected: 11/04/20 13:25
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-10
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			11/12/20 01:09	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/12/20 01:09	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/12/20 01:09	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/12/20 01:09	1
1,1-Dichloroethene	**1.56**		0.200		ug/L			11/12/20 01:09	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/12/20 01:09	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/12/20 01:09	1
2-Butanone	5.00	U	5.00		ug/L			11/12/20 01:09	1
2-Hexanone	5.00	U	5.00		ug/L			11/12/20 01:09	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/12/20 01:09	1
Acetone	5.00	U	5.00		ug/L			11/12/20 01:09	1
Benzene	0.200	U	0.200		ug/L			11/12/20 01:09	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/12/20 01:09	1
Bromoform	1.00	U	1.00		ug/L			11/12/20 01:09	1
Bromomethane	0.500	U	0.500		ug/L			11/12/20 01:09	1
Carbon disulfide	0.500	U	0.500		ug/L			11/12/20 01:09	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/12/20 01:09	1
Chlorobenzene	0.500	U	0.500		ug/L			11/12/20 01:09	1
Chloroethane	0.500	U	0.500		ug/L			11/12/20 01:09	1
Chloroform	0.200	U	0.200		ug/L			11/12/20 01:09	1
Chloromethane	0.500	U	0.500		ug/L			11/12/20 01:09	1
cis-1,2-Dichloroethene	**1.33**		0.200		ug/L			11/12/20 01:09	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 01:09	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/12/20 01:09	1
Ethylbenzene	0.500	U	0.500		ug/L			11/12/20 01:09	1
Freon 113	0.500	U	0.500		ug/L			11/12/20 01:09	1
m&p-Xylene	0.500	U	0.500		ug/L			11/12/20 01:09	1
Methylene Chloride	0.500	U	0.500		ug/L			11/12/20 01:09	1
o-Xylene	0.500	U	0.500		ug/L			11/12/20 01:09	1
Styrene	0.500	U	0.500		ug/L			11/12/20 01:09	1
Tetrachloroethene	**0.384**		0.200		ug/L			11/12/20 01:09	1
Toluene	0.200	U	0.200		ug/L			11/12/20 01:09	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 01:09	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 01:09	1
Trichloroethene	**10.5**		0.200		ug/L			11/12/20 01:09	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/12/20 01:09	1
Vinyl acetate	0.500	U	0.500		ug/L			11/12/20 01:09	1
Vinyl chloride	**0.325**		0.200		ug/L			11/12/20 01:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*11/12/20 01:09*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/12/20 01:09*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*11/12/20 01:09*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/12/20 01:09*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 12:44	1
Ethane (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 12:44	1
Ethene (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 12:44	1

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19569-1

Client Sample ID: E-13-1120

Date Collected: 11/04/20 13:25
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-10

Matrix: Water

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**136**		5.00		ug/L		11/06/20 08:43	11/06/20 12:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*92*		*28 - 140*	*11/06/20 08:43*	*11/06/20 12:44*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**2.04**	**H**	0.500		mg/L			11/06/20 21:20	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**10.0**		5.00		mg/L			11/06/20 21:20	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			11/26/20 00:38	1

Client Sample ID: E-15-1120

Date Collected: 11/04/20 12:55
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-11

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			11/12/20 01:31	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/12/20 01:31	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/12/20 01:31	1
1,1-Dichloroethane	**0.560**		0.500		ug/L			11/12/20 01:31	1
1,1-Dichloroethene	**1.33**		0.200		ug/L			11/12/20 01:31	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/12/20 01:31	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/12/20 01:31	1
2-Butanone	**5.48**		5.00		ug/L			11/12/20 01:31	1
2-Hexanone	5.00	U	5.00		ug/L			11/12/20 01:31	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/12/20 01:31	1
Acetone	5.00	U	5.00		ug/L			11/12/20 01:31	1
Benzene	0.200	U	0.200		ug/L			11/12/20 01:31	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/12/20 01:31	1
Bromoform	1.00	U	1.00		ug/L			11/12/20 01:31	1
Bromomethane	0.500	U	0.500		ug/L			11/12/20 01:31	1
Carbon disulfide	0.500	U	0.500		ug/L			11/12/20 01:31	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/12/20 01:31	1
Chlorobenzene	0.500	U	0.500		ug/L			11/12/20 01:31	1
Chloroethane	0.500	U	0.500		ug/L			11/12/20 01:31	1
Chloroform	0.200	U	0.200		ug/L			11/12/20 01:31	1
Chloromethane	0.500	U	0.500		ug/L			11/12/20 01:31	1
cis-1,2-Dichloroethene	**6.31**		0.200		ug/L			11/12/20 01:31	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 01:31	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/12/20 01:31	1
Ethylbenzene	0.500	U	0.500		ug/L			11/12/20 01:31	1
Freon 113	0.500	U	0.500		ug/L			11/12/20 01:31	1
m&p-Xylene	0.500	U	0.500		ug/L			11/12/20 01:31	1
Methylene Chloride	0.500	U	0.500		ug/L			11/12/20 01:31	1

Client Sample ID: E-15-1120
Date Collected: 11/04/20 12:55
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-11
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.500	U	0.500		ug/L			11/12/20 01:31	1
Styrene	0.500	U	0.500		ug/L			11/12/20 01:31	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/12/20 01:31	1
Toluene	**14.9**		0.200		ug/L			11/12/20 01:31	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 01:31	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 01:31	1
Trichloroethene	**1.08**		0.200		ug/L			11/12/20 01:31	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/12/20 01:31	1
Vinyl acetate	0.500	U	0.500		ug/L			11/12/20 01:31	1
Vinyl chloride	**4.70**		0.200		ug/L			11/12/20 01:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*11/12/20 01:31*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*11/12/20 01:31*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*11/12/20 01:31*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/12/20 01:31*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 13:02	1
Ethane (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 13:02	1
Ethene (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 13:02	1
Methane (1C)	**13100**	**E**	5.00		ug/L		11/06/20 08:43	11/06/20 13:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*84*		*28 - 140*	*11/06/20 08:43*	*11/06/20 13:02*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 13:38	100
Ethane (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 13:38	100
Ethene (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 13:38	100
Methane (1C)	**17400**		500		ug/L		11/10/20 08:59	11/10/20 13:38	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*106*		*28 - 140*	*11/10/20 08:59*	*11/10/20 13:38*	*100*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U H	0.100		mg/L			11/21/20 17:16	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/21/20 17:16	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**4.03**		1.00		mg/L			12/01/20 14:04	1

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19569-1

Client Sample ID: E-16-1120

Date Collected: 11/04/20 12:20
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-12

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			11/12/20 01:53	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/12/20 01:53	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/12/20 01:53	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/12/20 01:53	1
1,1-Dichloroethene	**0.644**		0.200		ug/L			11/12/20 01:53	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/12/20 01:53	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/12/20 01:53	1
2-Butanone	5.00	U	5.00		ug/L			11/12/20 01:53	1
2-Hexanone	5.00	U	5.00		ug/L			11/12/20 01:53	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/12/20 01:53	1
Acetone	5.00	U	5.00		ug/L			11/12/20 01:53	1
Benzene	0.200	U	0.200		ug/L			11/12/20 01:53	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/12/20 01:53	1
Bromoform	1.00	U	1.00		ug/L			11/12/20 01:53	1
Bromomethane	0.500	U	0.500		ug/L			11/12/20 01:53	1
Carbon disulfide	0.500	U	0.500		ug/L			11/12/20 01:53	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/12/20 01:53	1
Chlorobenzene	0.500	U	0.500		ug/L			11/12/20 01:53	1
Chloroethane	0.500	U	0.500		ug/L			11/12/20 01:53	1
Chloroform	0.200	U	0.200		ug/L			11/12/20 01:53	1
Chloromethane	0.500	U	0.500		ug/L			11/12/20 01:53	1
cis-1,2-Dichloroethene	**1.29**		0.200		ug/L			11/12/20 01:53	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 01:53	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/12/20 01:53	1
Ethylbenzene	0.500	U	0.500		ug/L			11/12/20 01:53	1
Freon 113	0.500	U	0.500		ug/L			11/12/20 01:53	1
m&p-Xylene	0.500	U	0.500		ug/L			11/12/20 01:53	1
Methylene Chloride	0.500	U	0.500		ug/L			11/12/20 01:53	1
o-Xylene	0.500	U	0.500		ug/L			11/12/20 01:53	1
Styrene	0.500	U	0.500		ug/L			11/12/20 01:53	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/12/20 01:53	1
Toluene	0.200	U	0.200		ug/L			11/12/20 01:53	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 01:53	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 01:53	1
Trichloroethene	**1.41**		0.200		ug/L			11/12/20 01:53	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/12/20 01:53	1
Vinyl acetate	0.500	U	0.500		ug/L			11/12/20 01:53	1
Vinyl chloride	**1.25**		0.200		ug/L			11/12/20 01:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*11/12/20 01:53*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/12/20 01:53*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*11/12/20 01:53*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/12/20 01:53*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 13:21	1
Ethane (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 13:21	1
Ethene (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 13:21	1

Client Sample ID: E-16-1120

Date Collected: 11/04/20 12:20
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-12
Matrix: Water

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**5080**	**E**	5.00		ug/L		11/06/20 08:43	11/06/20 13:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*89*		*28 - 140*	*11/06/20 08:43*	*11/06/20 13:21*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	250	U	250		ug/L		11/10/20 08:59	11/10/20 13:57	50
Ethane (1C)	250	U	250		ug/L		11/10/20 08:59	11/10/20 13:57	50
Ethene (1C)	250	U	250		ug/L		11/10/20 08:59	11/10/20 13:57	50
Methane (1C)	**6250**		250		ug/L		11/10/20 08:59	11/10/20 13:57	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*104*		*28 - 140*	*11/10/20 08:59*	*11/10/20 13:57*	*50*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U H	0.100		mg/L			11/19/20 13:23	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**29.0**		5.00		mg/L			11/06/20 20:26	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**5.30**		5.00		mg/L			11/26/20 01:08	5

Client Sample ID: DP1-1120

Date Collected: 11/04/20 10:40
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-13
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			11/12/20 05:34	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/12/20 05:34	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/12/20 05:34	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/12/20 05:34	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 05:34	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/12/20 05:34	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/12/20 05:34	1
2-Butanone	5.00	U	5.00		ug/L			11/12/20 05:34	1
2-Hexanone	5.00	U	5.00		ug/L			11/12/20 05:34	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/12/20 05:34	1
Acetone	**7.37**		5.00		ug/L			11/12/20 05:34	1
Benzene	0.200	U	0.200		ug/L			11/12/20 05:34	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/12/20 05:34	1
Bromoform	1.00	U	1.00		ug/L			11/12/20 05:34	1
Bromomethane	0.500	U	0.500		ug/L			11/12/20 05:34	1
Carbon disulfide	0.500	U	0.500		ug/L			11/12/20 05:34	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/12/20 05:34	1
Chlorobenzene	0.500	U	0.500		ug/L			11/12/20 05:34	1

Client Sample ID: DP1-1120

Date Collected: 11/04/20 10:40
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-13

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	0.500	U	0.500		ug/L			11/12/20 05:34	1
Chloroform	0.200	U	0.200		ug/L			11/12/20 05:34	1
Chloromethane	0.500	U	0.500		ug/L			11/12/20 05:34	1
cis-1,2-Dichloroethene	**1.76**		0.200		ug/L			11/12/20 05:34	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 05:34	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/12/20 05:34	1
Ethylbenzene	0.500	U	0.500		ug/L			11/12/20 05:34	1
Freon 113	0.500	U	0.500		ug/L			11/12/20 05:34	1
m&p-Xylene	0.500	U	0.500		ug/L			11/12/20 05:34	1
Methylene Chloride	0.500	U	0.500		ug/L			11/12/20 05:34	1
o-Xylene	0.500	U	0.500		ug/L			11/12/20 05:34	1
Styrene	0.500	U	0.500		ug/L			11/12/20 05:34	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/12/20 05:34	1
Toluene	0.200	U	0.200		ug/L			11/12/20 05:34	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 05:34	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 05:34	1
Trichloroethene	0.200	U	0.200		ug/L			11/12/20 05:34	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/12/20 05:34	1
Vinyl acetate	0.500	U	0.500		ug/L			11/12/20 05:34	1
Vinyl chloride	**2.29**		0.200		ug/L			11/12/20 05:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/12/20 05:34*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/12/20 05:34*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/12/20 05:34*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/12/20 05:34*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 13:39	1
Ethane (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 13:39	1
Ethene (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 13:39	1
Methane (1C)	**12100**	**E**	5.00		ug/L		11/06/20 08:43	11/06/20 13:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*89*		*28 - 140*	*11/06/20 08:43*	*11/06/20 13:39*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 14:17	100
Ethane (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 14:17	100
Ethene (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 14:17	100
Methane (1C)	**16900**		500		ug/L		11/10/20 08:59	11/10/20 14:17	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*105*		*28 - 140*	*11/10/20 08:59*	*11/10/20 14:17*	*100*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**2.90**		1.00		mg/L			11/24/20 23:04	1

Client Sample ID: DP1-1120
Lab Sample ID: 410-19569-13
Date Collected: 11/04/20 10:40
Matrix: Water
Date Received: 11/05/20 10:33

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	30.5		5.00		mg/L			11/26/20 01:24	5

Client Sample ID: Trip Blanks
Lab Sample ID: 410-19569-14
Date Collected: 11/04/20 00:00
Matrix: Water
Date Received: 11/05/20 10:33

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			11/11/20 23:19	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/11/20 23:19	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/11/20 23:19	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/11/20 23:19	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/11/20 23:19	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/11/20 23:19	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/11/20 23:19	1
2-Butanone	5.00	U	5.00		ug/L			11/11/20 23:19	1
2-Hexanone	5.00	U	5.00		ug/L			11/11/20 23:19	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/11/20 23:19	1
Acetone	5.00	U	5.00		ug/L			11/11/20 23:19	1
Benzene	0.200	U	0.200		ug/L			11/11/20 23:19	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/11/20 23:19	1
Bromoform	1.00	U	1.00		ug/L			11/11/20 23:19	1
Bromomethane	0.500	U	0.500		ug/L			11/11/20 23:19	1
Carbon disulfide	0.500	U	0.500		ug/L			11/11/20 23:19	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/11/20 23:19	1
Chlorobenzene	0.500	U	0.500		ug/L			11/11/20 23:19	1
Chloroethane	0.500	U	0.500		ug/L			11/11/20 23:19	1
Chloroform	0.200	U	0.200		ug/L			11/11/20 23:19	1
Chloromethane	0.500	U	0.500		ug/L			11/11/20 23:19	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/11/20 23:19	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/11/20 23:19	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/11/20 23:19	1
Ethylbenzene	0.500	U	0.500		ug/L			11/11/20 23:19	1
Freon 113	0.500	U	0.500		ug/L			11/11/20 23:19	1
m&p-Xylene	0.500	U	0.500		ug/L			11/11/20 23:19	1
Methylene Chloride	0.500	U	0.500		ug/L			11/11/20 23:19	1
o-Xylene	0.500	U	0.500		ug/L			11/11/20 23:19	1
Styrene	0.500	U	0.500		ug/L			11/11/20 23:19	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/11/20 23:19	1
Toluene	0.200	U	0.200		ug/L			11/11/20 23:19	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/11/20 23:19	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/11/20 23:19	1
Trichloroethene	0.200	U	0.200		ug/L			11/11/20 23:19	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/11/20 23:19	1
Vinyl acetate	0.500	U	0.500		ug/L			11/11/20 23:19	1
Vinyl chloride	0.200	U	0.200		ug/L			11/11/20 23:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*11/11/20 23:19*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/11/20 23:19*	*1*

Client Sample ID: Trip Blanks

Lab Sample ID: 410-19569-14
Matrix: Water
Date Collected: 11/04/20 00:00
Date Received: 11/05/20 10:33

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/11/20 23:19*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/11/20 23:19*	*1*

Client Sample ID: BOP-x-1120

Lab Sample ID: 410-19569-15
Matrix: Water
Date Collected: 11/04/20 10:55
Date Received: 11/05/20 10:33

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			11/12/20 02:15	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/12/20 02:15	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/12/20 02:15	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/12/20 02:15	1
1,1-Dichloroethene	**3.36**		0.200		ug/L			11/12/20 02:15	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/12/20 02:15	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/12/20 02:15	1
2-Butanone	5.00	U	5.00		ug/L			11/12/20 02:15	1
2-Hexanone	5.00	U	5.00		ug/L			11/12/20 02:15	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/12/20 02:15	1
Acetone	5.00	U	5.00		ug/L			11/12/20 02:15	1
Benzene	0.200	U	0.200		ug/L			11/12/20 02:15	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/12/20 02:15	1
Bromoform	1.00	U	1.00		ug/L			11/12/20 02:15	1
Bromomethane	0.500	U	0.500		ug/L			11/12/20 02:15	1
Carbon disulfide	0.500	U	0.500		ug/L			11/12/20 02:15	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/12/20 02:15	1
Chlorobenzene	0.500	U	0.500		ug/L			11/12/20 02:15	1
Chloroethane	0.500	U	0.500		ug/L			11/12/20 02:15	1
Chloroform	0.200	U	0.200		ug/L			11/12/20 02:15	1
Chloromethane	0.500	U	0.500		ug/L			11/12/20 02:15	1
cis-1,2-Dichloroethene	**2.08**		0.200		ug/L			11/12/20 02:15	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 02:15	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/12/20 02:15	1
Ethylbenzene	0.500	U	0.500		ug/L			11/12/20 02:15	1
Freon 113	**0.510**		0.500		ug/L			11/12/20 02:15	1
m&p-Xylene	0.500	U	0.500		ug/L			11/12/20 02:15	1
Methylene Chloride	0.500	U	0.500		ug/L			11/12/20 02:15	1
o-Xylene	0.500	U	0.500		ug/L			11/12/20 02:15	1
Styrene	0.500	U	0.500		ug/L			11/12/20 02:15	1
Tetrachloroethene	**0.678**		0.200		ug/L			11/12/20 02:15	1
Toluene	0.200	U	0.200		ug/L			11/12/20 02:15	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/12/20 02:15	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/12/20 02:15	1
Trichloroethene	**19.7**		0.200		ug/L			11/12/20 02:15	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/12/20 02:15	1
Vinyl acetate	0.500	U	0.500		ug/L			11/12/20 02:15	1
Vinyl chloride	0.200	U	0.200		ug/L			11/12/20 02:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*11/12/20 02:15*	*1*

Client: Landau & Associates, Inc.
Job ID: 410-19569-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: BOP-x-1120
Lab Sample ID: 410-19569-15
Date Collected: 11/04/20 10:55
Matrix: Water
Date Received: 11/05/20 10:33

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	93		80 - 120		11/12/20 02:15	1
4-Bromofluorobenzene (Surr)	96		80 - 120		11/12/20 02:15	1
Toluene-d8 (Surr)	102		80 - 120		11/12/20 02:15	1

Surrogate Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19569-1

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)
410-19569-1	BOP-78i-1120	97	93	98	101
410-19569-1 - DL	BOP-78i-1120	103	98	96	99
410-19569-2	BOP-79i-1120	100	92	98	100
410-19569-2 - DL	BOP-79i-1120	103	98	95	99
410-19569-3	BOP-84i-1120	97	91	98	100
410-19569-4	BOP-85i-1120	97	93	98	101
410-19569-4 - DL	BOP-85i-1120	98	92	97	100
410-19569-5	BOP-86i-1120	97	95	98	101
410-19569-5 - DL	BOP-86i-1120	101	93	98	102
410-19569-6	BOP-87i-1120	99	91	97	101
410-19569-6 - DL	BOP-87i-1120	104	97	94	99
410-19569-7	Trip Blanks	101	93	95	101
410-19569-8	E-4-1120	99	93	97	101
410-19569-9	E-12-1120	99	94	97	102
410-19569-10	E-13-1120	101	93	96	102
410-19569-11	E-15-1120	101	94	96	102
410-19569-12	E-16-1120	103	93	96	101
410-19569-13	DP1-1120	98	93	98	102
410-19569-14	Trip Blanks	102	93	97	101
410-19569-15	BOP-x-1120	102	93	96	102
LCS 410-64920/5	Lab Control Sample	99	92	99	103
LCS 410-64920/7	Lab Control Sample	102	92	99	102
LCS 410-65898/5	Lab Control Sample	104	97	95	100
LCS 410-65898/6	Lab Control Sample	104	96	97	99
LCS 410-66213/5	Lab Control Sample	101	95	97	100
LCS 410-66213/7	Lab Control Sample	101	96	97	99
LCSD 410-64920/6	Lab Control Sample Dup	101	92	99	104
LCSD 410-64920/8	Lab Control Sample Dup	99	94	97	103
LCSD 410-66213/6	Lab Control Sample Dup	103	95	97	100
LCSD 410-66213/8	Lab Control Sample Dup	105	96	98	99
MB 410-64920/10	Method Blank	101	94	96	102
MB 410-65898/8	Method Blank	106	98	93	100
MB 410-66213/10	Method Blank	103	98	94	100

Surrogate Legend

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

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		Propene1
Lab Sample ID	Client Sample ID	(28-140)
410-19569-8	E-4-1120	83
410-19569-9	E-12-1120	91
410-19569-9 - DL	E-12-1120	100
410-19569-10	E-13-1120	92

Surrogate Summary

Client: Landau & Associates, Inc.
Job ID: 410-19569-1
Project/Site: Boeing of Portland 0025116.120.412

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	Propene1 (28-140)						
410-19569-11	E-15-1120	84						
410-19569-11 - DL	E-15-1120	106						
410-19569-12	E-16-1120	89						
410-19569-12 - DL	E-16-1120	104						
410-19569-13	DP1-1120	89						
410-19569-13 - DL	DP1-1120	105						
LCS 410-62957/2-A	Lab Control Sample	100						
LCS 410-64147/2-A	Lab Control Sample	109						
MB 410-62957/1-A	Method Blank	98						
MB 410-64147/1-A	Method Blank	125						

Surrogate Legend

Propene = Propene

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

Lab Sample ID: MB 410-64920/10
Matrix: Water
Analysis Batch: 64920

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			11/11/20 21:41	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/11/20 21:41	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/11/20 21:41	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/11/20 21:41	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/11/20 21:41	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/11/20 21:41	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/11/20 21:41	1
2-Butanone	5.00	U	5.00		ug/L			11/11/20 21:41	1
2-Hexanone	5.00	U	5.00		ug/L			11/11/20 21:41	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/11/20 21:41	1
Acetone	5.00	U	5.00		ug/L			11/11/20 21:41	1
Benzene	0.200	U	0.200		ug/L			11/11/20 21:41	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/11/20 21:41	1
Bromoform	1.00	U	1.00		ug/L			11/11/20 21:41	1
Bromomethane	0.500	U	0.500		ug/L			11/11/20 21:41	1
Carbon disulfide	0.500	U	0.500		ug/L			11/11/20 21:41	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/11/20 21:41	1
Chlorobenzene	0.500	U	0.500		ug/L			11/11/20 21:41	1
Chloroethane	0.500	U	0.500		ug/L			11/11/20 21:41	1
Chloroform	0.200	U	0.200		ug/L			11/11/20 21:41	1
Chloromethane	0.500	U	0.500		ug/L			11/11/20 21:41	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/11/20 21:41	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/11/20 21:41	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/11/20 21:41	1
Ethylbenzene	0.500	U	0.500		ug/L			11/11/20 21:41	1
Freon 113	0.500	U	0.500		ug/L			11/11/20 21:41	1
m&p-Xylene	0.500	U	0.500		ug/L			11/11/20 21:41	1
Methylene Chloride	0.500	U	0.500		ug/L			11/11/20 21:41	1
o-Xylene	0.500	U	0.500		ug/L			11/11/20 21:41	1
Styrene	0.500	U	0.500		ug/L			11/11/20 21:41	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/11/20 21:41	1
Toluene	0.200	U	0.200		ug/L			11/11/20 21:41	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/11/20 21:41	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/11/20 21:41	1
Trichloroethene	0.200	U	0.200		ug/L			11/11/20 21:41	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/11/20 21:41	1
Vinyl acetate	0.500	U	0.500		ug/L			11/11/20 21:41	1
Vinyl chloride	0.200	U	0.200		ug/L			11/11/20 21:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*11/11/20 21:41*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*11/11/20 21:41*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*11/11/20 21:41*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/11/20 21:41*	*1*

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

Lab Sample ID: LCS 410-64920/5
Matrix: Water
Analysis Batch: 64920

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	4.163		ug/L		83	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.332		ug/L		107	75 - 123
1,1,2-Trichloroethane	5.00	5.271		ug/L		105	80 - 120
1,1-Dichloroethane	5.00	4.822		ug/L		96	74 - 120
1,1-Dichloroethene	5.00	4.867		ug/L		97	80 - 131
1,2-Dichloroethane	5.00	4.544		ug/L		91	69 - 122
1,2-Dichloropropane	5.00	5.350		ug/L		107	80 - 120
2-Butanone	37.5	39.67		ug/L		106	59 - 141
2-Hexanone	25.0	29.38		ug/L		118	52 - 140
4-Methyl-2-pentanone	25.0	27.67		ug/L		111	55 - 140
Acetone	37.5	34.11		ug/L		91	60 - 146
Benzene	5.00	5.023		ug/L		100	80 - 120
Bromodichloromethane	5.00	4.716		ug/L		94	73 - 124
Bromoform	5.00	4.346		ug/L		87	49 - 144
Bromomethane	5.00	4.100		ug/L		82	60 - 136
Carbon disulfide	5.00	5.063		ug/L		101	67 - 130
Carbon tetrachloride	5.00	4.066		ug/L		81	64 - 141
Chlorobenzene	5.00	4.910		ug/L		98	80 - 120
Chloroethane	5.00	4.541		ug/L		91	63 - 120
Chloroform	5.00	4.664		ug/L		93	80 - 120
Chloromethane	5.00	4.159		ug/L		83	56 - 124
cis-1,2-Dichloroethene	5.00	5.157		ug/L		103	80 - 122
cis-1,3-Dichloropropene	5.00	5.057		ug/L		101	67 - 121
Dibromochloromethane	5.00	4.817		ug/L		96	64 - 138
Ethylbenzene	5.00	4.777		ug/L		96	80 - 120
Freon 113	5.00	4.252		ug/L		85	75 - 133
m&p-Xylene	10.0	9.870		ug/L		99	80 - 120
Methylene Chloride	5.00	5.089		ug/L		102	80 - 120
o-Xylene	5.00	4.835		ug/L		97	80 - 120
Styrene	5.00	5.083		ug/L		102	80 - 120
Tetrachloroethene	5.00	4.520		ug/L		90	80 - 120
Toluene	5.00	5.066		ug/L		101	80 - 120
trans-1,2-Dichloroethene	5.00	4.835		ug/L		97	80 - 122
trans-1,3-Dichloropropene	5.00	4.898		ug/L		98	61 - 129
Trichloroethene	5.00	4.669		ug/L		93	80 - 120
Trichlorofluoromethane	5.00	4.039		ug/L		81	62 - 136
Vinyl chloride	5.00	4.133		ug/L		83	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

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

Lab Sample ID: LCS 410-64920/7
Matrix: Water
Analysis Batch: 64920

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	13.47		ug/L		108	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-64920/6
Matrix: Water
Analysis Batch: 64920

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	4.134		ug/L		83	78 - 126	1	30
1,1,2,2-Tetrachloroethane			5.00	5.229		ug/L		105	75 - 123	2	30
1,1,2-Trichloroethane			5.00	5.128		ug/L		103	80 - 120	3	30
1,1-Dichloroethane			5.00	4.822		ug/L		96	74 - 120	0	30
1,1-Dichloroethene			5.00	4.681		ug/L		94	80 - 131	4	30
1,2-Dichloroethane			5.00	4.286		ug/L		86	69 - 122	6	30
1,2-Dichloropropane			5.00	5.270		ug/L		105	80 - 120	2	30
2-Butanone			37.5	39.68		ug/L		106	59 - 141	0	30
2-Hexanone			25.0	28.83		ug/L		115	52 - 140	2	30
4-Methyl-2-pentanone			25.0	26.89		ug/L		108	55 - 140	3	30
Acetone			37.5	31.31		ug/L		83	60 - 146	9	30
Benzene			5.00	4.873		ug/L		97	80 - 120	3	30
Bromodichloromethane			5.00	4.668		ug/L		93	73 - 124	1	30
Bromoform			5.00	4.237		ug/L		85	49 - 144	3	30
Bromomethane			5.00	3.982		ug/L		80	60 - 136	3	30
Carbon disulfide			5.00	4.922		ug/L		98	67 - 130	3	30
Carbon tetrachloride			5.00	3.968		ug/L		79	64 - 141	2	30
Chlorobenzene			5.00	4.796		ug/L		96	80 - 120	2	30
Chloroethane			5.00	4.398		ug/L		88	63 - 120	3	30
Chloroform			5.00	4.555		ug/L		91	80 - 120	2	30
Chloromethane			5.00	4.063		ug/L		81	56 - 124	2	30
cis-1,2-Dichloroethene			5.00	4.962		ug/L		99	80 - 122	4	30
cis-1,3-Dichloropropene			5.00	4.851		ug/L		97	67 - 121	4	30
Dibromochloromethane			5.00	4.615		ug/L		92	64 - 138	4	30
Ethylbenzene			5.00	4.685		ug/L		94	80 - 120	2	30
Freon 113			5.00	4.249		ug/L		85	75 - 133	0	30
m&p-Xylene			10.0	9.716		ug/L		97	80 - 120	2	30
Methylene Chloride			5.00	4.956		ug/L		99	80 - 120	3	30
o-Xylene			5.00	4.789		ug/L		96	80 - 120	1	30
Styrene			5.00	4.968		ug/L		99	80 - 120	2	30
Tetrachloroethene			5.00	4.417		ug/L		88	80 - 120	2	30
Toluene			5.00	4.963		ug/L		99	80 - 120	2	30
trans-1,2-Dichloroethene			5.00	4.809		ug/L		96	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	4.790		ug/L		96	61 - 129	2	30
Trichloroethene			5.00	4.569		ug/L		91	80 - 120	2	30

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

Lab Sample ID: LCSD 410-64920/6
Matrix: Water
Analysis Batch: 64920

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	3.961		ug/L		79	62 - 136	2	30
Vinyl chloride			5.00	4.167		ug/L		83	60 - 125	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: LCSD 410-64920/8
Matrix: Water
Analysis Batch: 64920

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	13.29		ug/L		106	38 - 145	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: MB 410-65898/8
Matrix: Water
Analysis Batch: 65898

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			11/13/20 21:10	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/13/20 21:10	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/13/20 21:10	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/13/20 21:10	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/13/20 21:10	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/13/20 21:10	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/13/20 21:10	1
2-Butanone	5.00	U	5.00		ug/L			11/13/20 21:10	1
2-Hexanone	5.00	U	5.00		ug/L			11/13/20 21:10	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/13/20 21:10	1
Acetone	5.00	U	5.00		ug/L			11/13/20 21:10	1
Benzene	0.200	U	0.200		ug/L			11/13/20 21:10	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/13/20 21:10	1
Bromoform	1.00	U	1.00		ug/L			11/13/20 21:10	1
Bromomethane	0.500	U	0.500		ug/L			11/13/20 21:10	1
Carbon disulfide	0.500	U	0.500		ug/L			11/13/20 21:10	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/13/20 21:10	1
Chlorobenzene	0.500	U	0.500		ug/L			11/13/20 21:10	1
Chloroethane	0.500	U	0.500		ug/L			11/13/20 21:10	1
Chloroform	0.200	U	0.200		ug/L			11/13/20 21:10	1
Chloromethane	0.500	U	0.500		ug/L			11/13/20 21:10	1

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

Lab Sample ID: MB 410-65898/8
Matrix: Water
Analysis Batch: 65898

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			11/13/20 21:10	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/13/20 21:10	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/13/20 21:10	1
Ethylbenzene	0.500	U	0.500		ug/L			11/13/20 21:10	1
Freon 113	0.500	U	0.500		ug/L			11/13/20 21:10	1
m&p-Xylene	0.500	U	0.500		ug/L			11/13/20 21:10	1
Methylene Chloride	0.500	U	0.500		ug/L			11/13/20 21:10	1
o-Xylene	0.500	U	0.500		ug/L			11/13/20 21:10	1
Styrene	0.500	U	0.500		ug/L			11/13/20 21:10	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/13/20 21:10	1
Toluene	0.200	U	0.200		ug/L			11/13/20 21:10	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/13/20 21:10	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/13/20 21:10	1
Trichloroethene	0.200	U	0.200		ug/L			11/13/20 21:10	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/13/20 21:10	1
Vinyl acetate	0.500	U	0.500		ug/L			11/13/20 21:10	1
Vinyl chloride	0.200	U	0.200		ug/L			11/13/20 21:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*11/13/20 21:10*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/13/20 21:10*	*1*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*11/13/20 21:10*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/13/20 21:10*	*1*

Lab Sample ID: LCS 410-65898/5
Matrix: Water
Analysis Batch: 65898

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	4.413		ug/L		88	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.729		ug/L		115	75 - 123
1,1,2-Trichloroethane	5.00	5.676		ug/L		114	80 - 120
1,1-Dichloroethane	5.00	5.086		ug/L		102	74 - 120
1,1-Dichloroethene	5.00	4.651		ug/L		93	80 - 131
1,2-Dichloroethane	5.00	5.071		ug/L		101	69 - 122
1,2-Dichloropropane	5.00	5.357		ug/L		107	80 - 120
2-Butanone	37.5	41.74		ug/L		111	59 - 141
2-Hexanone	25.0	25.95		ug/L		104	52 - 140
4-Methyl-2-pentanone	25.0	25.68		ug/L		103	55 - 140
Acetone	37.5	35.35		ug/L		94	60 - 146
Benzene	5.00	4.977		ug/L		100	80 - 120
Bromodichloromethane	5.00	5.056		ug/L		101	73 - 124
Bromoform	5.00	5.000		ug/L		100	49 - 144
Bromomethane	5.00	3.533		ug/L		71	60 - 136
Carbon disulfide	5.00	4.521		ug/L		90	67 - 130
Carbon tetrachloride	5.00	4.417		ug/L		88	64 - 141
Chlorobenzene	5.00	4.982		ug/L		100	80 - 120
Chloroethane	5.00	3.738		ug/L		75	63 - 120

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

Lab Sample ID: LCS 410-65898/5
Matrix: Water
Analysis Batch: 65898

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	4.919		ug/L		98	80 - 120
Chloromethane	5.00	3.817		ug/L		76	56 - 124
cis-1,2-Dichloroethene	5.00	5.013		ug/L		100	80 - 122
cis-1,3-Dichloropropene	5.00	4.940		ug/L		99	67 - 121
Dibromochloromethane	5.00	5.341		ug/L		107	64 - 138
Ethylbenzene	5.00	5.005		ug/L		100	80 - 120
Freon 113	5.00	4.686		ug/L		94	75 - 133
m&p-Xylene	10.0	9.709		ug/L		97	80 - 120
Methylene Chloride	5.00	5.118		ug/L		102	80 - 120
o-Xylene	5.00	4.707		ug/L		94	80 - 120
Styrene	5.00	4.977		ug/L		100	80 - 120
Tetrachloroethene	5.00	5.071		ug/L		101	80 - 120
Toluene	5.00	4.901		ug/L		98	80 - 120
trans-1,2-Dichloroethene	5.00	4.626		ug/L		93	80 - 122
trans-1,3-Dichloropropene	5.00	5.117		ug/L		102	61 - 129
Trichloroethene	5.00	4.652		ug/L		93	80 - 120
Trichlorofluoromethane	5.00	4.057		ug/L		81	62 - 136
Vinyl chloride	5.00	3.895		ug/L		78	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 410-65898/6
Matrix: Water
Analysis Batch: 65898

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	16.06		ug/L		128	38 - 145

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: MB 410-66213/10
Matrix: Water
Analysis Batch: 66213

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			11/15/20 21:16	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/15/20 21:16	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/15/20 21:16	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/15/20 21:16	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/15/20 21:16	1

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

Lab Sample ID: MB 410-66213/10
Matrix: Water
Analysis Batch: 66213

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/15/20 21:16	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/15/20 21:16	1
2-Butanone	5.00	U	5.00		ug/L			11/15/20 21:16	1
2-Hexanone	5.00	U	5.00		ug/L			11/15/20 21:16	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/15/20 21:16	1
Acetone	5.00	U	5.00		ug/L			11/15/20 21:16	1
Benzene	0.200	U	0.200		ug/L			11/15/20 21:16	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/15/20 21:16	1
Bromoform	1.00	U	1.00		ug/L			11/15/20 21:16	1
Bromomethane	0.500	U	0.500		ug/L			11/15/20 21:16	1
Carbon disulfide	0.500	U	0.500		ug/L			11/15/20 21:16	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/15/20 21:16	1
Chlorobenzene	0.500	U	0.500		ug/L			11/15/20 21:16	1
Chloroethane	0.500	U	0.500		ug/L			11/15/20 21:16	1
Chloroform	0.200	U	0.200		ug/L			11/15/20 21:16	1
Chloromethane	0.500	U	0.500		ug/L			11/15/20 21:16	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/15/20 21:16	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/15/20 21:16	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/15/20 21:16	1
Ethylbenzene	0.500	U	0.500		ug/L			11/15/20 21:16	1
Freon 113	0.500	U	0.500		ug/L			11/15/20 21:16	1
m&p-Xylene	0.500	U	0.500		ug/L			11/15/20 21:16	1
Methylene Chloride	0.500	U	0.500		ug/L			11/15/20 21:16	1
o-Xylene	0.500	U	0.500		ug/L			11/15/20 21:16	1
Styrene	0.500	U	0.500		ug/L			11/15/20 21:16	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/15/20 21:16	1
Toluene	0.200	U	0.200		ug/L			11/15/20 21:16	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/15/20 21:16	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/15/20 21:16	1
Trichloroethene	0.200	U	0.200		ug/L			11/15/20 21:16	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/15/20 21:16	1
Vinyl acetate	0.500	U	0.500		ug/L			11/15/20 21:16	1
Vinyl chloride	0.200	U	0.200		ug/L			11/15/20 21:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*11/15/20 21:16*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/15/20 21:16*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*11/15/20 21:16*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/15/20 21:16*	*1*

Lab Sample ID: LCS 410-66213/5
Matrix: Water
Analysis Batch: 66213

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	4.101		ug/L		82	78 - 126		
1,1,2,2-Tetrachloroethane			5.00	5.672		ug/L		113	75 - 123		
1,1,2-Trichloroethane			5.00	5.573		ug/L		111	80 - 120		

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

Lab Sample ID: LCS 410-66213/5
Matrix: Water
Analysis Batch: 66213

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	5.00	4.787		ug/L		96	74 - 120
1,1-Dichloroethene	5.00	4.150		ug/L		83	80 - 131
1,2-Dichloroethane	5.00	4.751		ug/L		95	69 - 122
1,2-Dichloropropane	5.00	5.174		ug/L		103	80 - 120
2-Butanone	37.5	40.91		ug/L		109	59 - 141
2-Hexanone	25.0	25.84		ug/L		103	52 - 140
4-Methyl-2-pentanone	25.0	25.29		ug/L		101	55 - 140
Acetone	37.5	36.74		ug/L		98	60 - 146
Benzene	5.00	4.700		ug/L		94	80 - 120
Bromodichloromethane	5.00	4.993		ug/L		100	73 - 124
Bromoform	5.00	5.047		ug/L		101	49 - 144
Bromomethane	5.00	3.224		ug/L		64	60 - 136
Carbon disulfide	5.00	4.246		ug/L		85	67 - 130
Carbon tetrachloride	5.00	4.018		ug/L		80	64 - 141
Chlorobenzene	5.00	4.750		ug/L		95	80 - 120
Chloroethane	5.00	3.480		ug/L		70	63 - 120
Chloroform	5.00	4.648		ug/L		93	80 - 120
Chloromethane	5.00	3.560		ug/L		71	56 - 124
cis-1,2-Dichloroethene	5.00	4.712		ug/L		94	80 - 122
cis-1,3-Dichloropropene	5.00	4.860		ug/L		97	67 - 121
Dibromochloromethane	5.00	5.398		ug/L		108	64 - 138
Ethylbenzene	5.00	4.755		ug/L		95	80 - 120
Freon 113	5.00	4.048		ug/L		81	75 - 133
m&p-Xylene	10.0	9.236		ug/L		92	80 - 120
Methylene Chloride	5.00	4.828		ug/L		97	80 - 120
o-Xylene	5.00	4.528		ug/L		91	80 - 120
Styrene	5.00	4.790		ug/L		96	80 - 120
Tetrachloroethene	5.00	4.668		ug/L		93	80 - 120
Toluene	5.00	4.722		ug/L		94	80 - 120
trans-1,2-Dichloroethene	5.00	4.294		ug/L		86	80 - 122
trans-1,3-Dichloropropene	5.00	5.104		ug/L		102	61 - 129
Trichloroethene	5.00	4.320		ug/L		86	80 - 120
Trichlorofluoromethane	5.00	3.548		ug/L		71	62 - 136
Vinyl chloride	5.00	3.514		ug/L		70	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 410-66213/7
Matrix: Water
Analysis Batch: 66213

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	15.32		ug/L		123	38 - 145

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

Lab Sample ID: LCS 410-66213/7
Matrix: Water
Analysis Batch: 66213

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

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 410-66213/6
Matrix: Water
Analysis Batch: 66213

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	4.053		ug/L		81	78 - 126	1	30
1,1,2,2-Tetrachloroethane			5.00	5.652		ug/L		113	75 - 123	0	30
1,1,2-Trichloroethane			5.00	5.483		ug/L		110	80 - 120	2	30
1,1-Dichloroethane			5.00	4.763		ug/L		95	74 - 120	0	30
1,1-Dichloroethene			5.00	4.181		ug/L		84	80 - 131	1	30
1,2-Dichloroethane			5.00	4.739		ug/L		95	69 - 122	0	30
1,2-Dichloropropane			5.00	5.117		ug/L		102	80 - 120	1	30
2-Butanone			37.5	42.32		ug/L		113	59 - 141	3	30
2-Hexanone			25.0	27.01		ug/L		108	52 - 140	4	30
4-Methyl-2-pentanone			25.0	26.30		ug/L		105	55 - 140	4	30
Acetone			37.5	37.93		ug/L		101	60 - 146	3	30
Benzene			5.00	4.629		ug/L		93	80 - 120	2	30
Bromodichloromethane			5.00	4.884		ug/L		98	73 - 124	2	30
Bromoform			5.00	5.066		ug/L		101	49 - 144	0	30
Bromomethane			5.00	3.160		ug/L		63	60 - 136	2	30
Carbon disulfide			5.00	4.155		ug/L		83	67 - 130	2	30
Carbon tetrachloride			5.00	3.973		ug/L		79	64 - 141	1	30
Chlorobenzene			5.00	4.774		ug/L		95	80 - 120	0	30
Chloroethane			5.00	3.353		ug/L		67	63 - 120	4	30
Chloroform			5.00	4.623		ug/L		92	80 - 120	1	30
Chloromethane			5.00	3.470		ug/L		69	56 - 124	3	30
cis-1,2-Dichloroethene			5.00	4.720		ug/L		94	80 - 122	0	30
cis-1,3-Dichloropropene			5.00	4.783		ug/L		96	67 - 121	2	30
Dibromochloromethane			5.00	5.264		ug/L		105	64 - 138	3	30
Ethylbenzene			5.00	4.701		ug/L		94	80 - 120	1	30
Freon 113			5.00	3.957		ug/L		79	75 - 133	2	30
m&p-Xylene			10.0	9.221		ug/L		92	80 - 120	0	30
Methylene Chloride			5.00	4.800		ug/L		96	80 - 120	1	30
o-Xylene			5.00	4.484		ug/L		90	80 - 120	1	30
Styrene			5.00	4.753		ug/L		95	80 - 120	1	30
Tetrachloroethene			5.00	4.632		ug/L		93	80 - 120	1	30
Toluene			5.00	4.624		ug/L		92	80 - 120	2	30
trans-1,2-Dichloroethene			5.00	4.317		ug/L		86	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	5.091		ug/L		102	61 - 129	0	30
Trichloroethene			5.00	4.303		ug/L		86	80 - 120	0	30
Trichlorofluoromethane			5.00	3.582		ug/L		72	62 - 136	1	30
Vinyl chloride			5.00	3.460		ug/L		69	60 - 125	2	30

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

Lab Sample ID: LCSD 410-66213/6
Matrix: Water
Analysis Batch: 66213

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

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-66213/8
Matrix: Water
Analysis Batch: 66213

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	15.03		ug/L		120	38 - 145	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-62957/1-A
Matrix: Water
Analysis Batch: 62985

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 62957

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 08:46	1
Ethane (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 08:46	1
Ethene (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 08:46	1
Methane (1C)	5.00	U	5.00		ug/L		11/06/20 08:43	11/06/20 08:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*98*		*28 - 140*	*11/06/20 08:43*	*11/06/20 08:46*	*1*

Lab Sample ID: LCS 410-62957/2-A
Matrix: Water
Analysis Batch: 62985

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 62957

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetylene (1C)			51.2	59.79		ug/L		117	57 - 146
Ethane (1C)			59.4	60.84		ug/L		102	85 - 115
Ethene (1C)			60.4	61.83		ug/L		102	83 - 115
Methane (1C)			59.4	65.53		ug/L		110	85 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*100*		*28 - 140*

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 410-64147/1-A
Matrix: Water
Analysis Batch: 64175

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 64147

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/10/20 08:59	11/10/20 10:25	1
Ethane (1C)	5.00	U	5.00		ug/L		11/10/20 08:59	11/10/20 10:25	1
Ethene (1C)	5.00	U	5.00		ug/L		11/10/20 08:59	11/10/20 10:25	1
Methane (1C)	5.00	U	5.00		ug/L		11/10/20 08:59	11/10/20 10:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*125*		*28 - 140*	*11/10/20 08:59*	*11/10/20 10:25*	*1*

Lab Sample ID: LCS 410-64147/2-A
Matrix: Water
Analysis Batch: 64175

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64147

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acetylene (1C)			51.2	59.60		ug/L		116	57 - 146		
Ethane (1C)			59.4	62.47		ug/L		105	85 - 115		
Ethene (1C)			60.4	63.61		ug/L		105	83 - 115		
Methane (1C)			59.4	64.96		ug/L		109	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*109*		*28 - 140*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-63040/4
Matrix: Water
Analysis Batch: 63040

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U	0.100		mg/L			11/06/20 10:32	1

Lab Sample ID: LCS 410-63040/3
Matrix: Water
Analysis Batch: 63040

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.7327		mg/L		98	90 - 110		

Lab Sample ID: MB 410-63129/4
Matrix: Water
Analysis Batch: 63129

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U	0.100		mg/L			11/06/20 15:53	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy (Continued)

Lab Sample ID: LCS 410-63129/3
Matrix: Water
Analysis Batch: 63129

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.7120		mg/L		95	90 - 110		

Lab Sample ID: MB 410-67854/4
Matrix: Water
Analysis Batch: 67854

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U	0.100		mg/L			11/19/20 05:16	1

Lab Sample ID: LCS 410-67854/3
Matrix: Water
Analysis Batch: 67854

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.7177		mg/L		96	90 - 110		

Lab Sample ID: MB 410-68933/4
Matrix: Water
Analysis Batch: 68933

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U	0.100		mg/L			11/21/20 12:43	1

Lab Sample ID: LCS 410-68933/3
Matrix: Water
Analysis Batch: 68933

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.7214		mg/L		96	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-63041/4
Matrix: Water
Analysis Batch: 63041

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/06/20 10:32	1

Lab Sample ID: LCS 410-63041/3
Matrix: Water
Analysis Batch: 63041

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.537		mg/L		100	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 410-63130/4
Matrix: Water
Analysis Batch: 63130

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/06/20 15:53	1

Lab Sample ID: LCS 410-63130/3
Matrix: Water
Analysis Batch: 63130

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	6.910		mg/L		92	90 - 110		

Lab Sample ID: MB 410-68932/4
Matrix: Water
Analysis Batch: 68932

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/21/20 12:43	1

Lab Sample ID: LCS 410-68932/3
Matrix: Water
Analysis Batch: 68932

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.523		mg/L		100	90 - 110		

Lab Sample ID: MB 410-70016/4
Matrix: Water
Analysis Batch: 70016

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/24/20 15:18	1

Lab Sample ID: LCS 410-70016/3
Matrix: Water
Analysis Batch: 70016

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.348		mg/L		98	90 - 110		

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 410-63378/1-A
Matrix: Water
Analysis Batch: 66468

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 63378

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.206	U	0.206		mg/L		11/08/20 09:35	11/16/20 09:47	1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-63378/2-A
Matrix: Water
Analysis Batch: 66468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63378

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.402	0.4518		mg/L		112	80 - 120

Lab Sample ID: MB 410-62857/1-A
Matrix: Water
Analysis Batch: 65217

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 62857

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.200	U	0.200	mg/L		11/06/20 05:14	11/12/20 08:35	1

Lab Sample ID: LCS 410-62857/2-A
Matrix: Water
Analysis Batch: 65217

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 62857

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.402	0.4187		mg/L		104	80 - 120

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-70929/5
Matrix: Water
Analysis Batch: 70929

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00	mg/L			11/25/20 23:37	1

Lab Sample ID: LCS 410-70929/4
Matrix: Water
Analysis Batch: 70929

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	26.55		mg/L		106	91 - 113

Lab Sample ID: MB 410-71617/67
Matrix: Water
Analysis Batch: 71617

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00	mg/L			12/01/20 11:02	1

Lab Sample ID: LCS 410-71617/66
Matrix: Water
Analysis Batch: 71617

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	24.45		mg/L		98	91 - 113

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav (Continued)

Lab Sample ID: MB 410-72142/4
Matrix: Water
Analysis Batch: 72142

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			12/02/20 00:42	1

Lab Sample ID: LCS 410-72142/3
Matrix: Water
Analysis Batch: 72142

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	25.55		mg/L		102	91 - 113		

GC/MS VOA

Analysis Batch: 64920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-1	BOP-78i-1120	Total/NA	Water	8260C LL	
410-19569-2	BOP-79i-1120	Total/NA	Water	8260C LL	
410-19569-3	BOP-84i-1120	Total/NA	Water	8260C LL	
410-19569-4	BOP-85i-1120	Total/NA	Water	8260C LL	
410-19569-4 - DL	BOP-85i-1120	Total/NA	Water	8260C LL	
410-19569-5	BOP-86i-1120	Total/NA	Water	8260C LL	
410-19569-5 - DL	BOP-86i-1120	Total/NA	Water	8260C LL	
410-19569-6	BOP-87i-1120	Total/NA	Water	8260C LL	
410-19569-7	Trip Blanks	Total/NA	Water	8260C LL	
410-19569-8	E-4-1120	Total/NA	Water	8260C LL	
410-19569-9	E-12-1120	Total/NA	Water	8260C LL	
410-19569-10	E-13-1120	Total/NA	Water	8260C LL	
410-19569-11	E-15-1120	Total/NA	Water	8260C LL	
410-19569-12	E-16-1120	Total/NA	Water	8260C LL	
410-19569-13	DP1-1120	Total/NA	Water	8260C LL	
410-19569-14	Trip Blanks	Total/NA	Water	8260C LL	
410-19569-15	BOP-x-1120	Total/NA	Water	8260C LL	
MB 410-64920/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-64920/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-64920/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-64920/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-64920/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Analysis Batch: 65898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-2 - DL	BOP-79i-1120	Total/NA	Water	8260C LL	
410-19569-6 - DL	BOP-87i-1120	Total/NA	Water	8260C LL	
MB 410-65898/8	Method Blank	Total/NA	Water	8260C LL	
LCS 410-65898/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-65898/6	Lab Control Sample	Total/NA	Water	8260C LL	

Analysis Batch: 66213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-1 - DL	BOP-78i-1120	Total/NA	Water	8260C LL	
MB 410-66213/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-66213/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-66213/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-66213/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-66213/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

GC VOA

Prep Batch: 62957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-8	E-4-1120	Total/NA	Water	RSK-175	
410-19569-9	E-12-1120	Total/NA	Water	RSK-175	
410-19569-10	E-13-1120	Total/NA	Water	RSK-175	
410-19569-11	E-15-1120	Total/NA	Water	RSK-175	
410-19569-12	E-16-1120	Total/NA	Water	RSK-175	
410-19569-13	DP1-1120	Total/NA	Water	RSK-175	
MB 410-62957/1-A	Method Blank	Total/NA	Water	RSK-175	

GC VOA (Continued)

Prep Batch: 62957 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-62957/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 62985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-8	E-4-1120	Total/NA	Water	RSK-175	62957
410-19569-9	E-12-1120	Total/NA	Water	RSK-175	62957
410-19569-10	E-13-1120	Total/NA	Water	RSK-175	62957
410-19569-11	E-15-1120	Total/NA	Water	RSK-175	62957
410-19569-12	E-16-1120	Total/NA	Water	RSK-175	62957
410-19569-13	DP1-1120	Total/NA	Water	RSK-175	62957
MB 410-62957/1-A	Method Blank	Total/NA	Water	RSK-175	62957
LCS 410-62957/2-A	Lab Control Sample	Total/NA	Water	RSK-175	62957

Prep Batch: 64147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-9 - DL	E-12-1120	Total/NA	Water	RSK-175	
410-19569-11 - DL	E-15-1120	Total/NA	Water	RSK-175	
410-19569-12 - DL	E-16-1120	Total/NA	Water	RSK-175	
410-19569-13 - DL	DP1-1120	Total/NA	Water	RSK-175	
MB 410-64147/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-64147/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 64175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-9 - DL	E-12-1120	Total/NA	Water	RSK-175	64147
410-19569-11 - DL	E-15-1120	Total/NA	Water	RSK-175	64147
410-19569-12 - DL	E-16-1120	Total/NA	Water	RSK-175	64147
410-19569-13 - DL	DP1-1120	Total/NA	Water	RSK-175	64147
MB 410-64147/1-A	Method Blank	Total/NA	Water	RSK-175	64147
LCS 410-64147/2-A	Lab Control Sample	Total/NA	Water	RSK-175	64147

HPLC/IC

Analysis Batch: 63040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-10	E-13-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-63040/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-63040/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 63041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-10	E-13-1120	Total/NA	Water	EPA 300.0 R2.1	
410-19569-12	E-16-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-63041/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-63041/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 63129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-9	E-12-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-63129/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-63129/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

HPLC/IC

Analysis Batch: 63130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-9	E-12-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-63130/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-63130/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 67854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-12	E-16-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-67854/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-67854/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 68932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-8	E-4-1120	Total/NA	Water	EPA 300.0 R2.1	
410-19569-11	E-15-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-68932/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-68932/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 68933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-8	E-4-1120	Total/NA	Water	EPA 300.0 R2.1	
410-19569-11	E-15-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-68933/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-68933/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 70016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-13	DP1-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-70016/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-70016/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 62857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-8	E-4-1120	Total Recoverable	Water	3005A	
MB 410-62857/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-62857/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 63378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-8	E-4-1120	Dissolved	Water	Non-Digest Prep	
MB 410-63378/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-63378/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Analysis Batch: 65217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-8	E-4-1120	Total Recoverable	Water	6010D	62857
MB 410-62857/1-A	Method Blank	Total Recoverable	Water	6010D	62857
LCS 410-62857/2-A	Lab Control Sample	Total Recoverable	Water	6010D	62857

QC Association Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19569-1

Metals

Analysis Batch: 66468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-8	E-4-1120	Dissolved	Water	6010D	63378
MB 410-63378/1-A	Method Blank	Total/NA	Water	6010D	63378
LCS 410-63378/2-A	Lab Control Sample	Total/NA	Water	6010D	63378

General Chemistry

Analysis Batch: 70929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-10	E-13-1120	Total/NA	Water	5310C-2011	
410-19569-12	E-16-1120	Total/NA	Water	5310C-2011	
410-19569-13	DP1-1120	Total/NA	Water	5310C-2011	
MB 410-70929/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-70929/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Analysis Batch: 71617

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-8	E-4-1120	Total/NA	Water	5310C-2011	
410-19569-11	E-15-1120	Total/NA	Water	5310C-2011	
MB 410-71617/67	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-71617/66	Lab Control Sample	Total/NA	Water	5310C-2011	

Analysis Batch: 72142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19569-9	E-12-1120	Total/NA	Water	5310C-2011	
MB 410-72142/4	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-72142/3	Lab Control Sample	Total/NA	Water	5310C-2011	

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19569-1

Client Sample ID: BOP-78i-1120
Date Collected: 11/03/20 13:46
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	64920	11/11/20 23:41	USEJ	ELLE
Total/NA	Analysis	8260C LL	DL	10	66213	11/15/20 21:58	UCB5	ELLE

Client Sample ID: BOP-79i-1120
Date Collected: 11/03/20 13:28
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	64920	11/12/20 00:03	USEJ	ELLE
Total/NA	Analysis	8260C LL	DL	10	65898	11/13/20 23:26	R64Z	ELLE

Client Sample ID: BOP-84i-1120
Date Collected: 11/03/20 15:01
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	64920	11/12/20 02:37	USEJ	ELLE

Client Sample ID: BOP-85i-1120
Date Collected: 11/03/20 14:23
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	64920	11/12/20 03:21	USEJ	ELLE
Total/NA	Analysis	8260C LL	DL	10	64920	11/12/20 03:43	USEJ	ELLE

Client Sample ID: BOP-86i-1120
Date Collected: 11/03/20 14:41
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	64920	11/12/20 04:05	USEJ	ELLE
Total/NA	Analysis	8260C LL	DL	10	64920	11/12/20 04:28	USEJ	ELLE

Client Sample ID: BOP-87i-1120
Date Collected: 11/03/20 14:12
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	64920	11/12/20 04:50	USEJ	ELLE
Total/NA	Analysis	8260C LL	DL	50	65898	11/13/20 23:48	R64Z	ELLE

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19569-1

Client Sample ID: Trip Blanks
Date Collected: 11/03/20 00:00
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	64920	11/11/20 22:57	USEJ	ELLE

Client Sample ID: E-4-1120
Date Collected: 11/04/20 11:25
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	64920	11/12/20 00:25	USEJ	ELLE
Total/NA	Prep	RSK-175			62957	11/06/20 08:43	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	62985	11/06/20 12:06	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	68932	11/21/20 16:41	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	68933	11/21/20 16:41	W5UX	ELLE
Dissolved	Prep	Non-Digest Prep			63378	11/08/20 09:35	UJL8	ELLE
Dissolved	Analysis	6010D		1	66468	11/16/20 11:10	SB	ELLE
Total Recoverable	Prep	3005A			62857	11/06/20 05:14	UAMX	ELLE
Total Recoverable	Analysis	6010D		1	65217	11/12/20 09:42	ULJC	ELLE
Total/NA	Analysis	5310C-2011		1	71617	12/01/20 12:58	NKL9	ELLE

Client Sample ID: E-12-1120
Date Collected: 11/04/20 13:59
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	64920	11/12/20 00:47	USEJ	ELLE
Total/NA	Prep	RSK-175			62957	11/06/20 08:43	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	62985	11/06/20 12:25	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		64147	11/10/20 08:59	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	20	64175	11/10/20 12:59	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	63129	11/06/20 19:01	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	63130	11/06/20 19:01	W5UX	ELLE
Total/NA	Analysis	5310C-2011		1	72142	12/02/20 01:43	NKL9	ELLE

Client Sample ID: E-13-1120
Date Collected: 11/04/20 13:25
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	64920	11/12/20 01:09	USEJ	ELLE
Total/NA	Prep	RSK-175			62957	11/06/20 08:43	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	62985	11/06/20 12:44	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	63040	11/06/20 21:20	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	63041	11/06/20 21:20	W5UX	ELLE
Total/NA	Analysis	5310C-2011		1	70929	11/26/20 00:38	NKL9	ELLE

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19569-1

Client Sample ID: E-15-1120
Date Collected: 11/04/20 12:55
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	64920	11/12/20 01:31	USEJ	ELLE
Total/NA	Prep	RSK-175			62957	11/06/20 08:43	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	62985	11/06/20 13:02	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		64147	11/10/20 08:59	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	100	64175	11/10/20 13:38	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	68932	11/21/20 17:16	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	68933	11/21/20 17:16	W5UX	ELLE
Total/NA	Analysis	5310C-2011		1	71617	12/01/20 14:04	NKL9	ELLE

Client Sample ID: E-16-1120
Date Collected: 11/04/20 12:20
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	64920	11/12/20 01:53	USEJ	ELLE
Total/NA	Prep	RSK-175			62957	11/06/20 08:43	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	62985	11/06/20 13:21	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		64147	11/10/20 08:59	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	50	64175	11/10/20 13:57	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	67854	11/19/20 13:23	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	63041	11/06/20 20:26	W5UX	ELLE
Total/NA	Analysis	5310C-2011		5	70929	11/26/20 01:08	NKL9	ELLE

Client Sample ID: DP1-1120
Date Collected: 11/04/20 10:40
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-13
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	64920	11/12/20 05:34	USEJ	ELLE
Total/NA	Prep	RSK-175			62957	11/06/20 08:43	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	62985	11/06/20 13:39	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		64147	11/10/20 08:59	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	100	64175	11/10/20 14:17	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	70016	11/24/20 23:04	GJ35	ELLE
Total/NA	Analysis	5310C-2011		5	70929	11/26/20 01:24	NKL9	ELLE

Client Sample ID: Trip Blanks
Date Collected: 11/04/20 00:00
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-14
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	64920	11/11/20 23:19	USEJ	ELLE

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19569-1

Client Sample ID: BOP-x-1120

Date Collected: 11/04/20 10:55
Date Received: 11/05/20 10:33

Lab Sample ID: 410-19569-15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	64920	11/12/20 02:15	USEJ	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: 410-19569-1
Project/Site: Boeing of Portland 0025116.120.412

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 0025116.120.412

Job ID: 410-19569-1

Method	Method Description	Protocol	Laboratory
8260C LL	Volatile Organic Compounds by GC/MS	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010D	Metals (ICP)	SW846	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

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: 410-19569-1
Project/Site: Boeing of Portland 0025116.120.412

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-19569-1	BOP-78i-1120	Water	11/03/20 13:46	11/05/20 10:33	
410-19569-2	BOP-79i-1120	Water	11/03/20 13:28	11/05/20 10:33	
410-19569-3	BOP-84i-1120	Water	11/03/20 15:01	11/05/20 10:33	
410-19569-4	BOP-85i-1120	Water	11/03/20 14:23	11/05/20 10:33	
410-19569-5	BOP-86i-1120	Water	11/03/20 14:41	11/05/20 10:33	
410-19569-6	BOP-87i-1120	Water	11/03/20 14:12	11/05/20 10:33	
410-19569-7	Trip Blanks	Water	11/03/20 00:00	11/05/20 10:33	
410-19569-8	E-4-1120	Water	11/04/20 11:25	11/05/20 10:33	
410-19569-9	E-12-1120	Water	11/04/20 13:59	11/05/20 10:33	
410-19569-10	E-13-1120	Water	11/04/20 13:25	11/05/20 10:33	
410-19569-11	E-15-1120	Water	11/04/20 12:55	11/05/20 10:33	
410-19569-12	E-16-1120	Water	11/04/20 12:20	11/05/20 10:33	
410-19569-13	DP1-1120	Water	11/04/20 10:40	11/05/20 10:33	
410-19569-14	Trip Blanks	Water	11/04/20 00:00	11/05/20 10:33	
410-19569-15	BOP-x-1120	Water	11/04/20 10:55	11/05/20 10:33	

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-19569 Chain of Custody

mental use only

espond.

1 Client Information

Site Location: Gresham Oregon
Site Project: Boeing of Portland
Site Program/#: 0025116.120.412
Boeing PM: Debbie Taege
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL # of Coolers: 1

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	4 Analyses Requested: VOC (38 list)	TOC	Sulfate	Nitrate	AMEE	Total Iron	Dissolved Iron	5 Remarks/Comments
BOP-78; -1120	11/3/20	13:46	H_2O	3	X							
BOP-79; -1120	↓	13:28	↓	3	X							
BOP-84; -1120	↓	15:01	↓	3	X							
BOP-85; -1120	↓	14:23	↓	3	X							
BOP-86; -1120	↓	14:41	↓	3	X							
BOP-87; -1120	↓	14:12	↓	3	X							
Trip Blanks	—	—	↓	2	X							TB for samples collected 11/3
E-4-1120	11/4/20	11:25	H_2O	11	X	X	X	X	X	X	X	
E-12-1120	↓	13:59	↓	9	X	X	X	X	X			
E-13-1120	↓	13:25	↓	9	X	X	X	X	X			
E-15-1120	↓	12:55	↓	9	X	X	X	X	X			
E-16-1120	↓	12:20	↓	9	X	X	X	X	X			
DP1-1120	↓	10:40	↓	9	X	X	X		X			
Trip Blanks	—	—	↓	2	X							TB for samples collected 11/4
BOP-XX-1120	11/4/20	10:55	↓	3	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. Hayslett	11/4/20 16:30		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time 11/5/20 1033

Relinquished by commercial carrier (circle): UPS FedEx Other: _____
Temperature upon Receipt: 2.8 °C
Custody Seals Intact?: Yes No

7

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 410-19569-1

Login Number: 19569
List Number: 1
Creator: Rivera-Santa, Julissa

List Source: Eurofins Lancaster Laboratories Env

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.	N/A	
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.	True	
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	

eurofins | Environment Testing America



ANALYTICAL REPORT

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

Laboratory Job ID: 410-19766-1
Client Project/Site: Boeing of Portland 0025116.120.412
Revision: 2

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

Attn: Evelyn Ives

Authorized for release by:
12/16/2020 4:16:46 PM
Kay Hower, Principal Project Manager
(717)556-7364
Kay.Hower@eurofinset.com

Designee for

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

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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. 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. 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.



Kay Hower
Principal Project Manager
12/16/2020 4:16:46 PM

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 6
Detection Summary 8
Client Sample Results 12
Surrogate Summary 31
QC Sample Results 33
QC Association Summary 52
Lab Chronicle 58
Certification Summary 62
Method Summary 63
Sample Summary 64
Chain of Custody 65
Receipt Checklists 66

Definitions/Glossary

Client: Landau & Associates, Inc. Job ID: 410-19766-1
Project/Site: Boeing of Portland 0025116.120.412

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.

GC VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate recovery exceeds control limits

HPLC/IC

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

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

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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: 410-19766-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-19766-1

Revision
The report being provided is a revision of the original report sent on 12/9/2020. The report (revision 1) is being revised due to: remove chloride - not requsted on COC.

Receipt
The samples were received on 11/6/2020 10:06 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.6º C.

GC/MS VOA
Method 8260C LL: The continuing calibration verification (CCV) associated with batch 410-66213 recovered outside acceptance criteria, low biased, for Bromomethane, Chloroethane, Chloromethane and Vinyl chloride. 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.

Method 8260C LL: The continuing calibration verification (CCV) associated with batch 410-66213 recovered above the upper control limit for Vinyl acetate. Non-detections of the affected analytes are reported. Any detections are considered estimated.

Method 8260C LL: The continuing calibration verification (CCV) associated with batch 410-66620 recovered outside acceptance criteria, low biased, for 1,1,1-Trichloroethane, 1,2-Dichloroethane and Carbon tetrachloride. 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.

Method 8260C LL: The method requirement for no headspace was not met. The container (s) used for reanalysis of the following sample contained headspace: BOP-74i-1120 (410-19766-3). The sample container was received with headspace.

Method 8260C LL: The referenced method allows a maximum of 20% of the analytes in the continuing calibration verification (CCV) associated with batch 410-67216 to exceed the 20% Drift continuing calibration verification criteria. Non-detections of the affected analytes are reported. Any detections are considered estimated.
The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
Vinyl chloride	-29
Chloroethane	-24
Chloromethane	-27
Vinyl acetate	23
Bromomethane	-32

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

HPLC/IC
Method 300.0: The following samples were diluted due to the analyst error: BOP-72i-1120 (410-19766-1) and BOP-75i-1120 (410-19766-4) at 5.0 and 5.0. Elevated reporting limits (RLs) are provided.

Method 300.0: The following samples were analyzed outside of analytical holding time for Nitrogen, Nitrate due to laboratory error: BOP-72i-1120 (410-19766-1) and BOP-75i-1120 (410-19766-4).

Method 300.0: The following samples for Nitrogen, Nitrate was diluted due to the nature of the sample matrix: BOP-72i-1120 (410-19766-1) and BOP-75i-1120 (410-19766-4) at 5.0 and 5.0. Elevated reporting limits (RLs) are provided.

Method 300.0: The following sample was analyzed outside of analytical holding time for Nitrogen, Nitrate due to laboratory error; BOP-77i-1120 (410-19766-6).

Job ID: 410-19766-1 (Continued)

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Conti

Method 300.0: The following sample was diluted due to the analyst error: BOP-73i-1120 (410-19766-2) at 5.0. Elevated reporting limits (RLs) are provided. Reanalysis was performed at the client requested dilution factor of one with a lower reporting limit. Both sets of data are reported.

Method 300.0: The following sample was diluted due to the analyst error: BOP-76i-1120 (410-19766-5) at 5.0. Elevated reporting limits (RLs) are provided. Reanalysis was performed outside of the hold time at the client requested dilution factor of one with a lower reporting limit. Both sets of data are reported.

Method 300.0: Reanalysis of the following sample(s) was performed outside of the analytical holding time to meet client requirement of lower limits. Initial analysis performed on 11/7/2020 on batch 63723. Initial analysis was performed out of hold at a dilution factor of 5: BOP-73i-1120 (410-19766-2) and BOP-76i-1120 (410-19766-5).

Method 300.0: The following sample was analyzed outside of analytical holding time due to laboratory error: BOP-76i-1120 (410-19766-5).

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

GC VOA

Method RSK-175: The continuing calibration verification (CCV) associated with batch 410-63298 recovered above the upper control limit for Acetylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: BOP-72i-1120 (410-19766-1), BOP-73i-1120 (410-19766-2), BOP-74i-1120 (410-19766-3), BOP-75i-1120 (410-19766-4), BOP-76i-1120 (410-19766-5), BOP-77i-1120 (410-19766-6) and BOP-88i-1120 (410-19766-7).

Method RSK-175: Surrogate recovery for the following sample was outside control limits: BOP-88i-1120 (410-19766-7). Re-extraction and/or re-analysis was performed and surrogate recovery was outside control limits.

Method RSK-175: The following sample(s) were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible. The associated samples and measured pH are:
410-19766-3 pH = 3, 410-19766-4 pH = 3, 410-19766-5 pH = 4, 410-19766-6 pH = 3, 410-19766-7 pH = 5.

Method RSK-175: The following sample(s) were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible. Diluted analyses were needed, and the associated samples and pHs were:
410-19766-3 pH = 3, 410-19766-4 pH = 3, 410-19766-5 pH = 5, 410-19766-6 pH = 3, 410-19766-7 pH = 6.

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

Metals

Method 6010D: The reference method requires samples to be preserved to a pH of <2. The following sample(s) were received with insufficient preservation at a pH of 7: BOP-88i-1120 (410-19766-7).

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

General Chemistry

The reference method requires samples to be preserved to a pH of <2. The following sample(s) were received with insufficient preservation at a pH of 5: BOP-76i-1120 (410-19766-5), BOP-77i-1120 (410-19766-6) and BOP-88i-1120 (410-19766-7). The sample(s) were preserved to the appropriate pH in the laboratory.

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

VOA Prep

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

Detection Summary

Client: Landau & Associates, Inc.
Job ID: 410-19766-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: BOP-72i-1120 — Lab Sample ID: 410-19766-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	169		5.00		ug/L	1		8260C LL	Total/NA
2-Hexanone	5.80		5.00		ug/L	1		8260C LL	Total/NA
Acetone	38.9		5.00		ug/L	1		8260C LL	Total/NA
Toluene	0.811		0.200		ug/L	1		8260C LL	Total/NA
Methane (1C)	12700	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	21700		500		ug/L	100		RSK-175	Total/NA
Iron	77.2		0.200		mg/L	1		6010D	Total Recoverable
Iron	69.5		0.206		mg/L	1		6010D	Dissolved
Total Organic Carbon	154		5.00		mg/L	5		5310C-2011	Total/NA

Client Sample ID: BOP-73i-1120 — Lab Sample ID: 410-19766-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	2.86		0.500		ug/L	1		8260C LL	Total/NA
1,2-Dichloroethane	0.224		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone	102		5.00		ug/L	1		8260C LL	Total/NA
Acetone	19.9		5.00		ug/L	1		8260C LL	Total/NA
Benzene	0.204		0.200		ug/L	1		8260C LL	Total/NA
Chloroethane	0.814		0.500		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	17.9		0.200		ug/L	1		8260C LL	Total/NA
Toluene	0.566		0.200		ug/L	1		8260C LL	Total/NA
trans-1,2-Dichloroethene	16.5		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	34.3	E	0.200		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	16.5		4.00		ug/L	20		8260C LL	Total/NA
trans-1,2-Dichloroethene - DL	14.2		4.00		ug/L	20		8260C LL	Total/NA
Vinyl chloride - DL	38.1		4.00		ug/L	20		8260C LL	Total/NA
Ethane (1C)	145		5.00		ug/L	1		RSK-175	Total/NA
Ethene (1C)	743	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C)	17000	E	5.00		ug/L	1		RSK-175	Total/NA
Ethene (1C) - DL	595		500		ug/L	100		RSK-175	Total/NA
Methane (1C) - DL	16600		500		ug/L	100		RSK-175	Total/NA
Nitrogen, Nitrate	0.120	H	0.100		mg/L	1		EPA 300.0 R2.1	Total/NA
Iron	68.3		0.200		mg/L	1		6010D	Total Recoverable
Iron	69.6		0.206		mg/L	1		6010D	Dissolved
Total Organic Carbon	274		25.0		mg/L	25		5310C-2011	Total/NA

Client Sample ID: BOP-74i-1120 — Lab Sample ID: 410-19766-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	1290	E	5.00		ug/L	1		8260C LL	Total/NA
2-Hexanone	28.4		5.00		ug/L	1		8260C LL	Total/NA
Acetone	47.9		5.00		ug/L	1		8260C LL	Total/NA
Benzene	0.619		0.200		ug/L	1		8260C LL	Total/NA
Chloroform	3.81		0.200		ug/L	1		8260C LL	Total/NA
Chloromethane	7.74		0.500		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	5.88		0.200		ug/L	1		8260C LL	Total/NA
Methylene Chloride	0.811		0.500		ug/L	1		8260C LL	Total/NA
Toluene	1.21		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	1.10		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone - DL	994		100		ug/L	20		8260C LL	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BOP-74i-1120 (Continued)
Lab Sample ID: 410-19766-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene - DL	5.30		4.00		ug/L	20		8260C LL	Total/NA
Ethene (1C)	6.16		5.00		ug/L	1		RSK-175	Total/NA
Methane (1C)	13300	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	17200		500		ug/L	100		RSK-175	Total/NA
Nitrogen, Nitrate	4.60		0.500		mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	10.8		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
Iron	186		0.200		mg/L	1		6010D	Total Recoverable
Iron	362		1.03		mg/L	5		6010D	Dissolved
Total Organic Carbon	3910		100		mg/L	100		5310C-2011	Total/NA

Client Sample ID: BOP-75i-1120
Lab Sample ID: 410-19766-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	1660	E	5.00		ug/L	1		8260C LL	Total/NA
2-Hexanone	17.3		5.00		ug/L	1		8260C LL	Total/NA
Acetone	88.8		5.00		ug/L	1		8260C LL	Total/NA
Benzene	2.54		0.200		ug/L	1		8260C LL	Total/NA
Carbon disulfide	0.541		0.500		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	1.79		0.200		ug/L	1		8260C LL	Total/NA
Toluene	1.87		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	0.343		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.219		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone - DL	1420		100		ug/L	20		8260C LL	Total/NA
Methane (1C)	15900	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	19200		1000		ug/L	200		RSK-175	Total/NA
Iron	229		0.200		mg/L	1		6010D	Total Recoverable
Iron	206		0.206		mg/L	1		6010D	Dissolved
Total Organic Carbon	1740		250		mg/L	250		5310C-2011	Total/NA

Client Sample ID: BOP-76i-1120
Lab Sample ID: 410-19766-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	2510	E	5.00		ug/L	1		8260C LL	Total/NA
2-Hexanone	91.3		5.00		ug/L	1		8260C LL	Total/NA
Acetone	74.8		5.00		ug/L	1		8260C LL	Total/NA
Benzene	1.29		0.200		ug/L	1		8260C LL	Total/NA
Chloroform	0.327		0.200		ug/L	1		8260C LL	Total/NA
Chloromethane	0.616		0.500		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	1.39		0.200		ug/L	1		8260C LL	Total/NA
Toluene	0.425		0.200		ug/L	1		8260C LL	Total/NA
trans-1,2-Dichloroethene	0.380		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	0.931		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	2.73		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone - DL	3120		250		ug/L	50		8260C LL	Total/NA
Ethane (1C)	63.3		5.00		ug/L	1		RSK-175	Total/NA
Ethene (1C)	150		5.00		ug/L	1		RSK-175	Total/NA
Methane (1C)	12400	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	15800		500		ug/L	100		RSK-175	Total/NA
Sulfate	46.1		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
Iron	515		1.00		mg/L	5		6010D	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: BOP-76i-1120 (Continued) — Lab Sample ID: 410-19766-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Iron	541		1.03		mg/L	5		6010D	Dissolved
Total Organic Carbon	6630		250		mg/L	250		5310C-2011	Total/NA

Client Sample ID: BOP-77i-1120 — Lab Sample ID: 410-19766-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	1080	E	5.00		ug/L	1		8260C LL	Total/NA
2-Hexanone	101		5.00		ug/L	1		8260C LL	Total/NA
Acetone	65.9		5.00		ug/L	1		8260C LL	Total/NA
Benzene	0.661		0.200		ug/L	1		8260C LL	Total/NA
Carbon disulfide	0.595		0.500		ug/L	1		8260C LL	Total/NA
Chloroform	0.775		0.200		ug/L	1		8260C LL	Total/NA
Chloromethane	0.536		0.500		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	3.67		0.200		ug/L	1		8260C LL	Total/NA
Toluene	17.8		0.200		ug/L	1		8260C LL	Total/NA
trans-1,2-Dichloroethene	0.708		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	0.326		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	1.24		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone - DL	1180		50.0		ug/L	10		8260C LL	Total/NA
2-Hexanone - DL	93.9		50.0		ug/L	10		8260C LL	Total/NA
Acetone - DL	72.4		50.0		ug/L	10		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	3.94		2.00		ug/L	10		8260C LL	Total/NA
Toluene - DL	18.1		2.00		ug/L	10		8260C LL	Total/NA
Ethane (1C)	7.37		5.00		ug/L	1		RSK-175	Total/NA
Ethene (1C)	7.22		5.00		ug/L	1		RSK-175	Total/NA
Methane (1C)	12800	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	14000		500		ug/L	100		RSK-175	Total/NA
Nitrogen, Nitrate	20.3	H	2.00		mg/L	20		EPA 300.0 R2.1	Total/NA
Nitrogen, Nitrate	21.2	H	2.00		mg/L	20		EPA 300.0 R2.1	Total/NA
Sulfate	29.2		5.00		mg/L	5		EPA 300.0 R2.1	Total/NA
Iron	455		2.00		mg/L	10		6010D	Total Recoverable
Iron	422		1.03		mg/L	5		6010D	Dissolved
Total Organic Carbon	6990		250		mg/L	250		5310C-2011	Total/NA

Client Sample ID: BOP-88i-1120 — Lab Sample ID: 410-19766-7

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	6240	E	10.0		ug/L	2		8260C LL	Total/NA
2-Hexanone	54.1		10.0		ug/L	2		8260C LL	Total/NA
Acetone	78.4		10.0		ug/L	2		8260C LL	Total/NA
Benzene	1.07		0.400		ug/L	2		8260C LL	Total/NA
Chloroform	0.557		0.400		ug/L	2		8260C LL	Total/NA
Chloromethane	7.06		1.00		ug/L	2		8260C LL	Total/NA
cis-1,2-Dichloroethene	43.5		0.400		ug/L	2		8260C LL	Total/NA
Trichloroethene	0.933		0.400		ug/L	2		8260C LL	Total/NA
Vinyl chloride	3.67		0.400		ug/L	2		8260C LL	Total/NA
2-Butanone - DL	7610		500		ug/L	100		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	45.1		20.0		ug/L	100		8260C LL	Total/NA
Ethane (1C)	63.4		5.00		ug/L	1		RSK-175	Total/NA
Ethene (1C)	98.9		5.00		ug/L	1		RSK-175	Total/NA
Methane (1C)	9640	E	5.00		ug/L	1		RSK-175	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Landau & Associates, Inc.
Job ID: 410-19766-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: BOP-88i-1120 (Continued)
Lab Sample ID: 410-19766-7

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Methane (1C) - DL	12000		250		ug/L	50		RSK-175	Total/NA
Ethane (1C) - RA	60.8		5.00		ug/L	1		RSK-175	Total/NA
Ethene (1C) - RA	95.7		5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - RA	9000	E	5.00		ug/L	1		RSK-175	Total/NA
Nitrogen, Nitrate	0.888		0.500		mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	162		20.0		mg/L	20		EPA 300.0 R2.1	Total/NA
Iron	5120		5.00		mg/L	5		6010D	Total Recoverable
Iron	264		0.206		mg/L	1		6010D	Dissolved
Total Organic Carbon	20100		500		mg/L	500		5310C-2011	Total/NA

Client Sample ID: Trip Blanks
Lab Sample ID: 410-19766-8

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19766-1

Client Sample ID: BOP-72i-1120

Date Collected: 11/05/20 10:08
Date Received: 11/06/20 10:06

Lab Sample ID: 410-19766-1

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			11/15/20 22:40	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/15/20 22:40	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/15/20 22:40	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/15/20 22:40	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/15/20 22:40	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/15/20 22:40	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/15/20 22:40	1
2-Butanone	**169**		5.00		ug/L			11/15/20 22:40	1
2-Hexanone	**5.80**		5.00		ug/L			11/15/20 22:40	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/15/20 22:40	1
Acetone	**38.9**		5.00		ug/L			11/15/20 22:40	1
Benzene	0.200	U	0.200		ug/L			11/15/20 22:40	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/15/20 22:40	1
Bromoform	1.00	U	1.00		ug/L			11/15/20 22:40	1
Bromomethane	0.500	U	0.500		ug/L			11/15/20 22:40	1
Carbon disulfide	0.500	U	0.500		ug/L			11/15/20 22:40	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/15/20 22:40	1
Chlorobenzene	0.500	U	0.500		ug/L			11/15/20 22:40	1
Chloroethane	0.500	U	0.500		ug/L			11/15/20 22:40	1
Chloroform	0.200	U	0.200		ug/L			11/15/20 22:40	1
Chloromethane	0.500	U	0.500		ug/L			11/15/20 22:40	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/15/20 22:40	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/15/20 22:40	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/15/20 22:40	1
Ethylbenzene	0.500	U	0.500		ug/L			11/15/20 22:40	1
Freon 113	0.500	U	0.500		ug/L			11/15/20 22:40	1
m&p-Xylene	0.500	U	0.500		ug/L			11/15/20 22:40	1
Methylene Chloride	0.500	U	0.500		ug/L			11/15/20 22:40	1
o-Xylene	0.500	U	0.500		ug/L			11/15/20 22:40	1
Styrene	0.500	U	0.500		ug/L			11/15/20 22:40	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/15/20 22:40	1
Toluene	**0.811**		0.200		ug/L			11/15/20 22:40	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/15/20 22:40	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/15/20 22:40	1
Trichloroethene	0.200	U	0.200		ug/L			11/15/20 22:40	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/15/20 22:40	1
Vinyl acetate	0.500	U	0.500		ug/L			11/15/20 22:40	1
Vinyl chloride	0.200	U	0.200		ug/L			11/15/20 22:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*11/15/20 22:40*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*11/15/20 22:40*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*11/15/20 22:40*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/15/20 22:40*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/07/20 13:52	11/07/20 21:41	1
Ethane (1C)	5.00	U	5.00		ug/L		11/07/20 13:52	11/07/20 21:41	1
Ethene (1C)	5.00	U	5.00		ug/L		11/07/20 13:52	11/07/20 21:41	1

Client Sample ID: BOP-72i-1120

Date Collected: 11/05/20 10:08
Date Received: 11/06/20 10:06

Lab Sample ID: 410-19766-1

Matrix: Water

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**12700**	**E**	5.00		ug/L		11/07/20 13:52	11/07/20 21:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*75*		*28 - 140*	*11/07/20 13:52*	*11/07/20 21:41*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 14:40	100
Ethane (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 14:40	100
Ethene (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 14:40	100
Methane (1C)	**21700**		500		ug/L		11/10/20 08:59	11/10/20 14:40	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*104*		*28 - 140*	*11/10/20 08:59*	*11/10/20 14:40*	*100*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.500	U H	0.500		mg/L			11/07/20 13:58	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/25/20 00:01	1

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**77.2**		0.200		mg/L		11/10/20 03:21	11/16/20 08:11	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**69.5**		0.206		mg/L		11/10/20 06:40	11/15/20 14:50	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**154**		5.00		mg/L			11/26/20 13:24	5

Client Sample ID: BOP-73i-1120

Date Collected: 11/05/20 11:58
Date Received: 11/06/20 10:06

Lab Sample ID: 410-19766-2

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			11/18/20 08:36	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/18/20 08:36	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/18/20 08:36	1
1,1-Dichloroethane	**2.86**		0.500		ug/L			11/18/20 08:36	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/18/20 08:36	1
1,2-Dichloroethane	**0.224**		0.200		ug/L			11/18/20 08:36	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/18/20 08:36	1
2-Butanone	**102**		5.00		ug/L			11/18/20 08:36	1
2-Hexanone	5.00	U	5.00		ug/L			11/18/20 08:36	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/18/20 08:36	1
Acetone	**19.9**		5.00		ug/L			11/18/20 08:36	1

Client Sample ID: BOP-73i-1120
Lab Sample ID: 410-19766-2
Date Collected: 11/05/20 11:58
Matrix: Water
Date Received: 11/06/20 10:06

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.204**		0.200		ug/L			11/18/20 08:36	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/18/20 08:36	1
Bromoform	1.00	U	1.00		ug/L			11/18/20 08:36	1
Bromomethane	0.500	U	0.500		ug/L			11/18/20 08:36	1
Carbon disulfide	0.500	U	0.500		ug/L			11/18/20 08:36	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/18/20 08:36	1
Chlorobenzene	0.500	U	0.500		ug/L			11/18/20 08:36	1
Chloroethane	**0.814**		0.500		ug/L			11/18/20 08:36	1
Chloroform	0.200	U	0.200		ug/L			11/18/20 08:36	1
Chloromethane	0.500	U	0.500		ug/L			11/18/20 08:36	1
cis-1,2-Dichloroethene	**17.9**		0.200		ug/L			11/18/20 08:36	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/18/20 08:36	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/18/20 08:36	1
Ethylbenzene	0.500	U	0.500		ug/L			11/18/20 08:36	1
Freon 113	0.500	U	0.500		ug/L			11/18/20 08:36	1
m&p-Xylene	0.500	U	0.500		ug/L			11/18/20 08:36	1
Methylene Chloride	0.500	U	0.500		ug/L			11/18/20 08:36	1
o-Xylene	0.500	U	0.500		ug/L			11/18/20 08:36	1
Styrene	0.500	U	0.500		ug/L			11/18/20 08:36	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/18/20 08:36	1
Toluene	**0.566**		0.200		ug/L			11/18/20 08:36	1
trans-1,2-Dichloroethene	**16.5**		0.200		ug/L			11/18/20 08:36	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/18/20 08:36	1
Trichloroethene	0.200	U	0.200		ug/L			11/18/20 08:36	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/18/20 08:36	1
Vinyl acetate	0.500	U	0.500		ug/L			11/18/20 08:36	1
Vinyl chloride	**34.3**	**E**	0.200		ug/L			11/18/20 08:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*11/18/20 08:36*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*11/18/20 08:36*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*11/18/20 08:36*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/18/20 08:36*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	10.0	U	10.0		ug/L			11/16/20 03:41	20
1,1,2,2-Tetrachloroethane	4.00	U	4.00		ug/L			11/16/20 03:41	20
1,1,2-Trichloroethane	4.00	U	4.00		ug/L			11/16/20 03:41	20
1,1-Dichloroethane	10.0	U	10.0		ug/L			11/16/20 03:41	20
1,1-Dichloroethene	4.00	U	4.00		ug/L			11/16/20 03:41	20
1,2-Dichloroethane	4.00	U	4.00		ug/L			11/16/20 03:41	20
1,2-Dichloropropane	10.0	U	10.0		ug/L			11/16/20 03:41	20
2-Butanone	100	U	100		ug/L			11/16/20 03:41	20
2-Hexanone	100	U	100		ug/L			11/16/20 03:41	20
4-Methyl-2-pentanone	100	U	100		ug/L			11/16/20 03:41	20
Acetone	100	U	100		ug/L			11/16/20 03:41	20
Benzene	4.00	U	4.00		ug/L			11/16/20 03:41	20
Bromodichloromethane	10.0	U	10.0		ug/L			11/16/20 03:41	20
Bromoform	20.0	U	20.0		ug/L			11/16/20 03:41	20

Client Sample ID: BOP-73i-1120

Date Collected: 11/05/20 11:58
Date Received: 11/06/20 10:06

Lab Sample ID: 410-19766-2

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	10.0	U	10.0		ug/L			11/16/20 03:41	20
Carbon disulfide	10.0	U	10.0		ug/L			11/16/20 03:41	20
Carbon tetrachloride	4.00	U	4.00		ug/L			11/16/20 03:41	20
Chlorobenzene	10.0	U	10.0		ug/L			11/16/20 03:41	20
Chloroethane	10.0	U	10.0		ug/L			11/16/20 03:41	20
Chloroform	4.00	U	4.00		ug/L			11/16/20 03:41	20
Chloromethane	10.0	U	10.0		ug/L			11/16/20 03:41	20
cis-1,2-Dichloroethene	**16.5**		4.00		ug/L			11/16/20 03:41	20
cis-1,3-Dichloropropene	4.00	U	4.00		ug/L			11/16/20 03:41	20
Dibromochloromethane	10.0	U	10.0		ug/L			11/16/20 03:41	20
Ethylbenzene	10.0	U	10.0		ug/L			11/16/20 03:41	20
Freon 113	10.0	U	10.0		ug/L			11/16/20 03:41	20
m&p-Xylene	10.0	U	10.0		ug/L			11/16/20 03:41	20
Methylene Chloride	10.0	U	10.0		ug/L			11/16/20 03:41	20
o-Xylene	10.0	U	10.0		ug/L			11/16/20 03:41	20
Styrene	10.0	U	10.0		ug/L			11/16/20 03:41	20
Tetrachloroethene	4.00	U	4.00		ug/L			11/16/20 03:41	20
Toluene	4.00	U	4.00		ug/L			11/16/20 03:41	20
trans-1,2-Dichloroethene	**14.2**		4.00		ug/L			11/16/20 03:41	20
trans-1,3-Dichloropropene	4.00	U	4.00		ug/L			11/16/20 03:41	20
Trichloroethene	4.00	U	4.00		ug/L			11/16/20 03:41	20
Trichlorofluoromethane	10.0	U	10.0		ug/L			11/16/20 03:41	20
Vinyl acetate	10.0	U	10.0		ug/L			11/16/20 03:41	20
Vinyl chloride	**38.1**		4.00		ug/L			11/16/20 03:41	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*11/16/20 03:41*	*20*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/16/20 03:41*	*20*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*11/16/20 03:41*	*20*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/16/20 03:41*	*20*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/07/20 13:52	11/07/20 22:17	1
Ethane (1C)	**145**		5.00		ug/L		11/07/20 13:52	11/07/20 22:17	1
Ethene (1C)	**743**	**E**	5.00		ug/L		11/07/20 13:52	11/07/20 22:17	1
Methane (1C)	**17000**	**E**	5.00		ug/L		11/07/20 13:52	11/07/20 22:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*78*		*28 - 140*	*11/07/20 13:52*	*11/07/20 22:17*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 14:58	100
Ethane (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 14:58	100
Ethene (1C)	**595**		500		ug/L		11/10/20 08:59	11/10/20 14:58	100
Methane (1C)	**16600**		500		ug/L		11/10/20 08:59	11/10/20 14:58	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*105*		*28 - 140*	*11/10/20 08:59*	*11/10/20 14:58*	*100*

Client Sample ID: BOP-73i-1120
Lab Sample ID: 410-19766-2
Date Collected: 11/05/20 11:58
Matrix: Water
Date Received: 11/06/20 10:06

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.500	U	0.500		mg/L			11/07/20 14:58	5
Nitrogen, Nitrate	**0.120**	**H**	0.100		mg/L			11/19/20 12:11	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/19/20 00:14	1

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**68.3**		0.200		mg/L		11/09/20 02:52	11/16/20 11:17	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**69.6**		0.206		mg/L		11/08/20 09:35	11/16/20 10:44	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**274**		25.0		mg/L			11/26/20 13:40	25

Client Sample ID: BOP-74i-1120
Lab Sample ID: 410-19766-3
Date Collected: 11/05/20 13:42
Matrix: Water
Date Received: 11/06/20 10:06

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			11/15/20 23:02	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/15/20 23:02	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/15/20 23:02	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/15/20 23:02	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/15/20 23:02	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/15/20 23:02	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/15/20 23:02	1
2-Butanone	**1290**	**E**	5.00		ug/L			11/15/20 23:02	1
2-Hexanone	**28.4**		5.00		ug/L			11/15/20 23:02	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/15/20 23:02	1
Acetone	**47.9**		5.00		ug/L			11/15/20 23:02	1
Benzene	**0.619**		0.200		ug/L			11/15/20 23:02	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/15/20 23:02	1
Bromoform	1.00	U	1.00		ug/L			11/15/20 23:02	1
Bromomethane	0.500	U	0.500		ug/L			11/15/20 23:02	1
Carbon disulfide	0.500	U	0.500		ug/L			11/15/20 23:02	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/15/20 23:02	1
Chlorobenzene	0.500	U	0.500		ug/L			11/15/20 23:02	1
Chloroethane	0.500	U	0.500		ug/L			11/15/20 23:02	1
Chloroform	**3.81**		0.200		ug/L			11/15/20 23:02	1
Chloromethane	**7.74**		0.500		ug/L			11/15/20 23:02	1
cis-1,2-Dichloroethene	**5.88**		0.200		ug/L			11/15/20 23:02	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/15/20 23:02	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/15/20 23:02	1
Ethylbenzene	0.500	U	0.500		ug/L			11/15/20 23:02	1
Freon 113	0.500	U	0.500		ug/L			11/15/20 23:02	1

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19766-1

Client Sample ID: BOP-74i-1120

Date Collected: 11/05/20 13:42
Date Received: 11/06/20 10:06

Lab Sample ID: 410-19766-3

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
m&p-Xylene	0.500	U	0.500		ug/L			11/15/20 23:02	1
Methylene Chloride	**0.811**		0.500		ug/L			11/15/20 23:02	1
o-Xylene	0.500	U	0.500		ug/L			11/15/20 23:02	1
Styrene	0.500	U	0.500		ug/L			11/15/20 23:02	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/15/20 23:02	1
Toluene	**1.21**		0.200		ug/L			11/15/20 23:02	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/15/20 23:02	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/15/20 23:02	1
Trichloroethene	0.200	U	0.200		ug/L			11/15/20 23:02	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/15/20 23:02	1
Vinyl acetate	0.500	U	0.500		ug/L			11/15/20 23:02	1
Vinyl chloride	**1.10**		0.200		ug/L			11/15/20 23:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*11/15/20 23:02*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*11/15/20 23:02*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*11/15/20 23:02*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/15/20 23:02*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	10.0	U	10.0		ug/L			11/16/20 23:34	20
1,1,2,2-Tetrachloroethane	4.00	U	4.00		ug/L			11/16/20 23:34	20
1,1,2-Trichloroethane	4.00	U	4.00		ug/L			11/16/20 23:34	20
1,1-Dichloroethane	10.0	U	10.0		ug/L			11/16/20 23:34	20
1,1-Dichloroethene	4.00	U	4.00		ug/L			11/16/20 23:34	20
1,2-Dichloroethane	4.00	U	4.00		ug/L			11/16/20 23:34	20
1,2-Dichloropropane	10.0	U	10.0		ug/L			11/16/20 23:34	20
2-Butanone	**994**		100		ug/L			11/16/20 23:34	20
2-Hexanone	100	U	100		ug/L			11/16/20 23:34	20
4-Methyl-2-pentanone	100	U	100		ug/L			11/16/20 23:34	20
Acetone	100	U	100		ug/L			11/16/20 23:34	20
Benzene	4.00	U	4.00		ug/L			11/16/20 23:34	20
Bromodichloromethane	10.0	U	10.0		ug/L			11/16/20 23:34	20
Bromoform	20.0	U	20.0		ug/L			11/16/20 23:34	20
Bromomethane	10.0	U	10.0		ug/L			11/16/20 23:34	20
Carbon disulfide	10.0	U	10.0		ug/L			11/16/20 23:34	20
Carbon tetrachloride	4.00	U	4.00		ug/L			11/16/20 23:34	20
Chlorobenzene	10.0	U	10.0		ug/L			11/16/20 23:34	20
Chloroethane	10.0	U	10.0		ug/L			11/16/20 23:34	20
Chloroform	4.00	U	4.00		ug/L			11/16/20 23:34	20
Chloromethane	10.0	U	10.0		ug/L			11/16/20 23:34	20
cis-1,2-Dichloroethene	**5.30**		4.00		ug/L			11/16/20 23:34	20
cis-1,3-Dichloropropene	4.00	U	4.00		ug/L			11/16/20 23:34	20
Dibromochloromethane	10.0	U	10.0		ug/L			11/16/20 23:34	20
Ethylbenzene	10.0	U	10.0		ug/L			11/16/20 23:34	20
Freon 113	10.0	U	10.0		ug/L			11/16/20 23:34	20
m&p-Xylene	10.0	U	10.0		ug/L			11/16/20 23:34	20
Methylene Chloride	10.0	U	10.0		ug/L			11/16/20 23:34	20
o-Xylene	10.0	U	10.0		ug/L			11/16/20 23:34	20

Client Sample ID: BOP-74i-1120

Date Collected: 11/05/20 13:42
Date Received: 11/06/20 10:06

Lab Sample ID: 410-19766-3

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Styrene	10.0	U	10.0		ug/L			11/16/20 23:34	20
Tetrachloroethene	4.00	U	4.00		ug/L			11/16/20 23:34	20
Toluene	4.00	U	4.00		ug/L			11/16/20 23:34	20
trans-1,2-Dichloroethene	4.00	U	4.00		ug/L			11/16/20 23:34	20
trans-1,3-Dichloropropene	4.00	U	4.00		ug/L			11/16/20 23:34	20
Trichloroethene	4.00	U	4.00		ug/L			11/16/20 23:34	20
Trichlorofluoromethane	10.0	U	10.0		ug/L			11/16/20 23:34	20
Vinyl acetate	10.0	U	10.0		ug/L			11/16/20 23:34	20
Vinyl chloride	4.00	U	4.00		ug/L			11/16/20 23:34	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/16/20 23:34*	*20*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*11/16/20 23:34*	*20*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/16/20 23:34*	*20*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/16/20 23:34*	*20*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/07/20 13:52	11/07/20 22:35	1
Ethane (1C)	5.00	U	5.00		ug/L		11/07/20 13:52	11/07/20 22:35	1
Ethene (1C)	**6.16**		5.00		ug/L		11/07/20 13:52	11/07/20 22:35	1
Methane (1C)	**13300**	**E**	5.00		ug/L		11/07/20 13:52	11/07/20 22:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*92*		*28 - 140*	*11/07/20 13:52*	*11/07/20 22:35*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 15:17	100
Ethane (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 15:17	100
Ethene (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 15:17	100
Methane (1C)	**17200**		500		ug/L		11/10/20 08:59	11/10/20 15:17	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*102*		*28 - 140*	*11/10/20 08:59*	*11/10/20 15:17*	*100*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**4.60**		0.500		mg/L			11/07/20 16:31	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**10.8**		5.00		mg/L			11/07/20 16:31	5

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**186**		0.200		mg/L		11/10/20 03:21	11/16/20 08:01	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**362**		1.03		mg/L		11/10/20 06:40	11/15/20 15:11	5

Client Sample ID: BOP-74i-1120

Lab Sample ID: 410-19766-3

Date Collected: 11/05/20 13:42

Matrix: Water

Date Received: 11/06/20 10:06

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**3910**		100		mg/L			11/26/20 13:55	100

Client Sample ID: BOP-75i-1120

Lab Sample ID: 410-19766-4

Date Collected: 11/05/20 09:18

Matrix: Water

Date Received: 11/06/20 10:06

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			11/16/20 05:49	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/16/20 05:49	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/16/20 05:49	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/16/20 05:49	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 05:49	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/16/20 05:49	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/16/20 05:49	1
2-Butanone	**1660**	**E**	5.00		ug/L			11/16/20 05:49	1
2-Hexanone	**17.3**		5.00		ug/L			11/16/20 05:49	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/16/20 05:49	1
Acetone	**88.8**		5.00		ug/L			11/16/20 05:49	1
Benzene	**2.54**		0.200		ug/L			11/16/20 05:49	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/16/20 05:49	1
Bromoform	1.00	U	1.00		ug/L			11/16/20 05:49	1
Bromomethane	0.500	U	0.500		ug/L			11/16/20 05:49	1
Carbon disulfide	**0.541**		0.500		ug/L			11/16/20 05:49	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/16/20 05:49	1
Chlorobenzene	0.500	U	0.500		ug/L			11/16/20 05:49	1
Chloroethane	0.500	U	0.500		ug/L			11/16/20 05:49	1
Chloroform	0.200	U	0.200		ug/L			11/16/20 05:49	1
Chloromethane	0.500	U	0.500		ug/L			11/16/20 05:49	1
cis-1,2-Dichloroethene	**1.79**		0.200		ug/L			11/16/20 05:49	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/16/20 05:49	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/16/20 05:49	1
Ethylbenzene	0.500	U	0.500		ug/L			11/16/20 05:49	1
Freon 113	0.500	U	0.500		ug/L			11/16/20 05:49	1
m&p-Xylene	0.500	U	0.500		ug/L			11/16/20 05:49	1
Methylene Chloride	0.500	U	0.500		ug/L			11/16/20 05:49	1
o-Xylene	0.500	U	0.500		ug/L			11/16/20 05:49	1
Styrene	0.500	U	0.500		ug/L			11/16/20 05:49	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/16/20 05:49	1
Toluene	**1.87**		0.200		ug/L			11/16/20 05:49	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 05:49	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/16/20 05:49	1
Trichloroethene	**0.343**		0.200		ug/L			11/16/20 05:49	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/16/20 05:49	1
Vinyl acetate	0.500	U	0.500		ug/L			11/16/20 05:49	1
Vinyl chloride	**0.219**		0.200		ug/L			11/16/20 05:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*11/16/20 05:49*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*11/16/20 05:49*	*1*

Client: Landau & Associates, Inc.
Job ID: 410-19766-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: BOP-75i-1120
Lab Sample ID: 410-19766-4
Date Collected: 11/05/20 09:18
Matrix: Water
Date Received: 11/06/20 10:06

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*11/16/20 05:49*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/16/20 05:49*	*1*

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	10.0	U	10.0	ug/L			11/16/20 23:56	20
1,1,2,2-Tetrachloroethane	4.00	U	4.00	ug/L			11/16/20 23:56	20
1,1,2-Trichloroethane	4.00	U	4.00	ug/L			11/16/20 23:56	20
1,1-Dichloroethane	10.0	U	10.0	ug/L			11/16/20 23:56	20
1,1-Dichloroethene	4.00	U	4.00	ug/L			11/16/20 23:56	20
1,2-Dichloroethane	4.00	U	4.00	ug/L			11/16/20 23:56	20
1,2-Dichloropropane	10.0	U	10.0	ug/L			11/16/20 23:56	20
2-Butanone	**1420**		100	ug/L			11/16/20 23:56	20
2-Hexanone	100	U	100	ug/L			11/16/20 23:56	20
4-Methyl-2-pentanone	100	U	100	ug/L			11/16/20 23:56	20
Acetone	100	U	100	ug/L			11/16/20 23:56	20
Benzene	4.00	U	4.00	ug/L			11/16/20 23:56	20
Bromodichloromethane	10.0	U	10.0	ug/L			11/16/20 23:56	20
Bromoform	20.0	U	20.0	ug/L			11/16/20 23:56	20
Bromomethane	10.0	U	10.0	ug/L			11/16/20 23:56	20
Carbon disulfide	10.0	U	10.0	ug/L			11/16/20 23:56	20
Carbon tetrachloride	4.00	U	4.00	ug/L			11/16/20 23:56	20
Chlorobenzene	10.0	U	10.0	ug/L			11/16/20 23:56	20
Chloroethane	10.0	U	10.0	ug/L			11/16/20 23:56	20
Chloroform	4.00	U	4.00	ug/L			11/16/20 23:56	20
Chloromethane	10.0	U	10.0	ug/L			11/16/20 23:56	20
cis-1,2-Dichloroethene	4.00	U	4.00	ug/L			11/16/20 23:56	20
cis-1,3-Dichloropropene	4.00	U	4.00	ug/L			11/16/20 23:56	20
Dibromochloromethane	10.0	U	10.0	ug/L			11/16/20 23:56	20
Ethylbenzene	10.0	U	10.0	ug/L			11/16/20 23:56	20
Freon 113	10.0	U	10.0	ug/L			11/16/20 23:56	20
m&p-Xylene	10.0	U	10.0	ug/L			11/16/20 23:56	20
Methylene Chloride	10.0	U	10.0	ug/L			11/16/20 23:56	20
o-Xylene	10.0	U	10.0	ug/L			11/16/20 23:56	20
Styrene	10.0	U	10.0	ug/L			11/16/20 23:56	20
Tetrachloroethene	4.00	U	4.00	ug/L			11/16/20 23:56	20
Toluene	4.00	U	4.00	ug/L			11/16/20 23:56	20
trans-1,2-Dichloroethene	4.00	U	4.00	ug/L			11/16/20 23:56	20
trans-1,3-Dichloropropene	4.00	U	4.00	ug/L			11/16/20 23:56	20
Trichloroethene	4.00	U	4.00	ug/L			11/16/20 23:56	20
Trichlorofluoromethane	10.0	U	10.0	ug/L			11/16/20 23:56	20
Vinyl acetate	10.0	U	10.0	ug/L			11/16/20 23:56	20
Vinyl chloride	4.00	U	4.00	ug/L			11/16/20 23:56	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*11/16/20 23:56*	*20*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/16/20 23:56*	*20*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/16/20 23:56*	*20*
Toluene-d8 (Surr)	*103*		*80 - 120*		*11/16/20 23:56*	*20*

Client Sample ID: BOP-75i-1120

Date Collected: 11/05/20 09:18
Date Received: 11/06/20 10:06

Lab Sample ID: 410-19766-4

Matrix: Water

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/07/20 13:52	11/07/20 22:53	1
Ethane (1C)	5.00	U	5.00		ug/L		11/07/20 13:52	11/07/20 22:53	1
Ethene (1C)	5.00	U	5.00		ug/L		11/07/20 13:52	11/07/20 22:53	1
Methane (1C)	**15900**	**E**	5.00		ug/L		11/07/20 13:52	11/07/20 22:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*78*		*28 - 140*	*11/07/20 13:52*	*11/07/20 22:53*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	1000	U	1000		ug/L		11/10/20 08:59	11/10/20 15:36	200
Ethane (1C)	1000	U	1000		ug/L		11/10/20 08:59	11/10/20 15:36	200
Ethene (1C)	1000	U	1000		ug/L		11/10/20 08:59	11/10/20 15:36	200
Methane (1C)	**19200**		1000		ug/L		11/10/20 08:59	11/10/20 15:36	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*103*		*28 - 140*	*11/10/20 08:59*	*11/10/20 15:36*	*200*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.500	U H	0.500		mg/L			11/07/20 12:32	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/24/20 23:21	1

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**229**		0.200		mg/L		11/10/20 03:21	11/16/20 08:14	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**206**		0.206		mg/L		11/10/20 06:40	11/15/20 14:34	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1740**		250		mg/L			11/26/20 14:42	250

Client Sample ID: BOP-76i-1120

Date Collected: 11/05/20 10:59
Date Received: 11/06/20 10:06

Lab Sample ID: 410-19766-5

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			11/15/20 23:23	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/15/20 23:23	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/15/20 23:23	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/15/20 23:23	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/15/20 23:23	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/15/20 23:23	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/15/20 23:23	1
2-Butanone	**2510**	**E**	5.00		ug/L			11/15/20 23:23	1

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19766-1

Client Sample ID: BOP-76i-1120

Date Collected: 11/05/20 10:59
Date Received: 11/06/20 10:06

Lab Sample ID: 410-19766-5

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	**91.3**		5.00		ug/L			11/15/20 23:23	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/15/20 23:23	1
Acetone	**74.8**		5.00		ug/L			11/15/20 23:23	1
Benzene	**1.29**		0.200		ug/L			11/15/20 23:23	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/15/20 23:23	1
Bromoform	1.00	U	1.00		ug/L			11/15/20 23:23	1
Bromomethane	0.500	U	0.500		ug/L			11/15/20 23:23	1
Carbon disulfide	0.500	U	0.500		ug/L			11/15/20 23:23	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/15/20 23:23	1
Chlorobenzene	0.500	U	0.500		ug/L			11/15/20 23:23	1
Chloroethane	0.500	U	0.500		ug/L			11/15/20 23:23	1
Chloroform	**0.327**		0.200		ug/L			11/15/20 23:23	1
Chloromethane	**0.616**		0.500		ug/L			11/15/20 23:23	1
cis-1,2-Dichloroethene	**1.39**		0.200		ug/L			11/15/20 23:23	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/15/20 23:23	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/15/20 23:23	1
Ethylbenzene	0.500	U	0.500		ug/L			11/15/20 23:23	1
Freon 113	0.500	U	0.500		ug/L			11/15/20 23:23	1
m&p-Xylene	0.500	U	0.500		ug/L			11/15/20 23:23	1
Methylene Chloride	0.500	U	0.500		ug/L			11/15/20 23:23	1
o-Xylene	0.500	U	0.500		ug/L			11/15/20 23:23	1
Styrene	0.500	U	0.500		ug/L			11/15/20 23:23	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/15/20 23:23	1
Toluene	**0.425**		0.200		ug/L			11/15/20 23:23	1
trans-1,2-Dichloroethene	**0.380**		0.200		ug/L			11/15/20 23:23	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/15/20 23:23	1
Trichloroethene	**0.931**		0.200		ug/L			11/15/20 23:23	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/15/20 23:23	1
Vinyl acetate	0.500	U	0.500		ug/L			11/15/20 23:23	1
Vinyl chloride	**2.73**		0.200		ug/L			11/15/20 23:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*11/15/20 23:23*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*11/15/20 23:23*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*11/15/20 23:23*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/15/20 23:23*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	25.0	U	25.0		ug/L			11/17/20 00:18	50
1,1,2,2-Tetrachloroethane	10.0	U	10.0		ug/L			11/17/20 00:18	50
1,1,2-Trichloroethane	10.0	U	10.0		ug/L			11/17/20 00:18	50
1,1-Dichloroethane	25.0	U	25.0		ug/L			11/17/20 00:18	50
1,1-Dichloroethene	10.0	U	10.0		ug/L			11/17/20 00:18	50
1,2-Dichloroethane	10.0	U	10.0		ug/L			11/17/20 00:18	50
1,2-Dichloropropane	25.0	U	25.0		ug/L			11/17/20 00:18	50
2-Butanone	**3120**		250		ug/L			11/17/20 00:18	50
2-Hexanone	250	U	250		ug/L			11/17/20 00:18	50
4-Methyl-2-pentanone	250	U	250		ug/L			11/17/20 00:18	50
Acetone	250	U	250		ug/L			11/17/20 00:18	50

Client Sample ID: BOP-76i-1120
Lab Sample ID: 410-19766-5

Date Collected: 11/05/20 10:59
Matrix: Water
Date Received: 11/06/20 10:06

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	10.0	U	10.0		ug/L			11/17/20 00:18	50
Bromodichloromethane	25.0	U	25.0		ug/L			11/17/20 00:18	50
Bromoform	50.0	U	50.0		ug/L			11/17/20 00:18	50
Bromomethane	25.0	U	25.0		ug/L			11/17/20 00:18	50
Carbon disulfide	25.0	U	25.0		ug/L			11/17/20 00:18	50
Carbon tetrachloride	10.0	U	10.0		ug/L			11/17/20 00:18	50
Chlorobenzene	25.0	U	25.0		ug/L			11/17/20 00:18	50
Chloroethane	25.0	U	25.0		ug/L			11/17/20 00:18	50
Chloroform	10.0	U	10.0		ug/L			11/17/20 00:18	50
Chloromethane	25.0	U	25.0		ug/L			11/17/20 00:18	50
cis-1,2-Dichloroethene	10.0	U	10.0		ug/L			11/17/20 00:18	50
cis-1,3-Dichloropropene	10.0	U	10.0		ug/L			11/17/20 00:18	50
Dibromochloromethane	25.0	U	25.0		ug/L			11/17/20 00:18	50
Ethylbenzene	25.0	U	25.0		ug/L			11/17/20 00:18	50
Freon 113	25.0	U	25.0		ug/L			11/17/20 00:18	50
m&p-Xylene	25.0	U	25.0		ug/L			11/17/20 00:18	50
Methylene Chloride	25.0	U	25.0		ug/L			11/17/20 00:18	50
o-Xylene	25.0	U	25.0		ug/L			11/17/20 00:18	50
Styrene	25.0	U	25.0		ug/L			11/17/20 00:18	50
Tetrachloroethene	10.0	U	10.0		ug/L			11/17/20 00:18	50
Toluene	10.0	U	10.0		ug/L			11/17/20 00:18	50
trans-1,2-Dichloroethene	10.0	U	10.0		ug/L			11/17/20 00:18	50
trans-1,3-Dichloropropene	10.0	U	10.0		ug/L			11/17/20 00:18	50
Trichloroethene	10.0	U	10.0		ug/L			11/17/20 00:18	50
Trichlorofluoromethane	25.0	U	25.0		ug/L			11/17/20 00:18	50
Vinyl acetate	25.0	U	25.0		ug/L			11/17/20 00:18	50
Vinyl chloride	10.0	U	10.0		ug/L			11/17/20 00:18	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/17/20 00:18*	*50*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*11/17/20 00:18*	*50*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/17/20 00:18*	*50*
Toluene-d8 (Surr)	*103*		*80 - 120*		*11/17/20 00:18*	*50*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/07/20 13:52	11/07/20 23:11	1
Ethane (1C)	**63.3**		5.00		ug/L		11/07/20 13:52	11/07/20 23:11	1
Ethene (1C)	**150**		5.00		ug/L		11/07/20 13:52	11/07/20 23:11	1
Methane (1C)	**12400**	**E**	5.00		ug/L		11/07/20 13:52	11/07/20 23:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*139*		*28 - 140*	*11/07/20 13:52*	*11/07/20 23:11*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 15:54	100
Ethane (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 15:54	100
Ethene (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 15:54	100
Methane (1C)	**15800**		500		ug/L		11/10/20 08:59	11/10/20 15:54	100

Client: Landau & Associates, Inc.
Job ID: 410-19766-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: BOP-76i-1120
Lab Sample ID: 410-19766-5
Date Collected: 11/05/20 10:59
Matrix: Water
Date Received: 11/06/20 10:06

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*107*		*28 - 140*	*11/10/20 08:59*	*11/10/20 15:54*	*100*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.500	U H	0.500		mg/L			11/07/20 14:22	5
Nitrogen, Nitrate	0.100	U H	0.100		mg/L			11/19/20 12:29	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**46.1**		5.00		mg/L			11/07/20 14:22	5

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**515**		1.00		mg/L		11/10/20 03:21	11/16/20 07:39	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**541**		1.03		mg/L		11/10/20 06:40	11/15/20 15:08	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**6630**		250		mg/L			11/26/20 14:57	250

Client Sample ID: BOP-77i-1120
Lab Sample ID: 410-19766-6
Date Collected: 11/05/20 12:40
Matrix: Water
Date Received: 11/06/20 10:06

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			11/16/20 04:24	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/16/20 04:24	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/16/20 04:24	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/16/20 04:24	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 04:24	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/16/20 04:24	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/16/20 04:24	1
2-Butanone	**1080**	**E**	5.00		ug/L			11/16/20 04:24	1
2-Hexanone	**101**		5.00		ug/L			11/16/20 04:24	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/16/20 04:24	1
Acetone	**65.9**		5.00		ug/L			11/16/20 04:24	1
Benzene	**0.661**		0.200		ug/L			11/16/20 04:24	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/16/20 04:24	1
Bromoform	1.00	U	1.00		ug/L			11/16/20 04:24	1
Bromomethane	0.500	U	0.500		ug/L			11/16/20 04:24	1
Carbon disulfide	**0.595**		0.500		ug/L			11/16/20 04:24	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/16/20 04:24	1
Chlorobenzene	0.500	U	0.500		ug/L			11/16/20 04:24	1
Chloroethane	0.500	U	0.500		ug/L			11/16/20 04:24	1
Chloroform	**0.775**		0.200		ug/L			11/16/20 04:24	1
Chloromethane	**0.536**		0.500		ug/L			11/16/20 04:24	1
cis-1,2-Dichloroethene	**3.67**		0.200		ug/L			11/16/20 04:24	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/16/20 04:24	1

Client: Landau & Associates, Inc.
Job ID: 410-19766-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: BOP-77i-1120
Lab Sample ID: 410-19766-6
Date Collected: 11/05/20 12:40
Matrix: Water
Date Received: 11/06/20 10:06

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	0.500	U	0.500		ug/L			11/16/20 04:24	1
Ethylbenzene	0.500	U	0.500		ug/L			11/16/20 04:24	1
Freon 113	0.500	U	0.500		ug/L			11/16/20 04:24	1
m&p-Xylene	0.500	U	0.500		ug/L			11/16/20 04:24	1
Methylene Chloride	0.500	U	0.500		ug/L			11/16/20 04:24	1
o-Xylene	0.500	U	0.500		ug/L			11/16/20 04:24	1
Styrene	0.500	U	0.500		ug/L			11/16/20 04:24	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/16/20 04:24	1
Toluene	**17.8**		0.200		ug/L			11/16/20 04:24	1
trans-1,2-Dichloroethene	**0.708**		0.200		ug/L			11/16/20 04:24	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/16/20 04:24	1
Trichloroethene	**0.326**		0.200		ug/L			11/16/20 04:24	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/16/20 04:24	1
Vinyl acetate	0.500	U	0.500		ug/L			11/16/20 04:24	1
Vinyl chloride	**1.24**		0.200		ug/L			11/16/20 04:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*11/16/20 04:24*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*11/16/20 04:24*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/16/20 04:24*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/16/20 04:24*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.00	U	5.00		ug/L			11/16/20 04:45	10
1,1,2,2-Tetrachloroethane	2.00	U	2.00		ug/L			11/16/20 04:45	10
1,1,2-Trichloroethane	2.00	U	2.00		ug/L			11/16/20 04:45	10
1,1-Dichloroethane	5.00	U	5.00		ug/L			11/16/20 04:45	10
1,1-Dichloroethene	2.00	U	2.00		ug/L			11/16/20 04:45	10
1,2-Dichloroethane	2.00	U	2.00		ug/L			11/16/20 04:45	10
1,2-Dichloropropane	5.00	U	5.00		ug/L			11/16/20 04:45	10
2-Butanone	**1180**		50.0		ug/L			11/16/20 04:45	10
2-Hexanone	**93.9**		50.0		ug/L			11/16/20 04:45	10
4-Methyl-2-pentanone	50.0	U	50.0		ug/L			11/16/20 04:45	10
Acetone	**72.4**		50.0		ug/L			11/16/20 04:45	10
Benzene	2.00	U	2.00		ug/L			11/16/20 04:45	10
Bromodichloromethane	5.00	U	5.00		ug/L			11/16/20 04:45	10
Bromoform	10.0	U	10.0		ug/L			11/16/20 04:45	10
Bromomethane	5.00	U	5.00		ug/L			11/16/20 04:45	10
Carbon disulfide	5.00	U	5.00		ug/L			11/16/20 04:45	10
Carbon tetrachloride	2.00	U	2.00		ug/L			11/16/20 04:45	10
Chlorobenzene	5.00	U	5.00		ug/L			11/16/20 04:45	10
Chloroethane	5.00	U	5.00		ug/L			11/16/20 04:45	10
Chloroform	2.00	U	2.00		ug/L			11/16/20 04:45	10
Chloromethane	5.00	U	5.00		ug/L			11/16/20 04:45	10
cis-1,2-Dichloroethene	**3.94**		2.00		ug/L			11/16/20 04:45	10
cis-1,3-Dichloropropene	2.00	U	2.00		ug/L			11/16/20 04:45	10
Dibromochloromethane	5.00	U	5.00		ug/L			11/16/20 04:45	10
Ethylbenzene	5.00	U	5.00		ug/L			11/16/20 04:45	10
Freon 113	5.00	U	5.00		ug/L			11/16/20 04:45	10

Client Sample ID: BOP-77i-1120
Date Collected: 11/05/20 12:40
Date Received: 11/06/20 10:06

Lab Sample ID: 410-19766-6
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
m&p-Xylene	5.00	U	5.00		ug/L			11/16/20 04:45	10
Methylene Chloride	5.00	U	5.00		ug/L			11/16/20 04:45	10
o-Xylene	5.00	U	5.00		ug/L			11/16/20 04:45	10
Styrene	5.00	U	5.00		ug/L			11/16/20 04:45	10
Tetrachloroethene	2.00	U	2.00		ug/L			11/16/20 04:45	10
Toluene	**18.1**		2.00		ug/L			11/16/20 04:45	10
trans-1,2-Dichloroethene	2.00	U	2.00		ug/L			11/16/20 04:45	10
trans-1,3-Dichloropropene	2.00	U	2.00		ug/L			11/16/20 04:45	10
Trichloroethene	2.00	U	2.00		ug/L			11/16/20 04:45	10
Trichlorofluoromethane	5.00	U	5.00		ug/L			11/16/20 04:45	10
Vinyl acetate	5.00	U	5.00		ug/L			11/16/20 04:45	10
Vinyl chloride	2.00	U	2.00		ug/L			11/16/20 04:45	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*11/16/20 04:45*	*10*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*11/16/20 04:45*	*10*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/16/20 04:45*	*10*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/16/20 04:45*	*10*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/07/20 13:52	11/07/20 23:30	1
Ethane (1C)	**7.37**		5.00		ug/L		11/07/20 13:52	11/07/20 23:30	1
Ethene (1C)	**7.22**		5.00		ug/L		11/07/20 13:52	11/07/20 23:30	1
Methane (1C)	**12800**	**E**	5.00		ug/L		11/07/20 13:52	11/07/20 23:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*101*		*28 - 140*	*11/07/20 13:52*	*11/07/20 23:30*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 16:13	100
Ethane (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 16:13	100
Ethene (1C)	500	U	500		ug/L		11/10/20 08:59	11/10/20 16:13	100
Methane (1C)	**14000**		500		ug/L		11/10/20 08:59	11/10/20 16:13	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*103*		*28 - 140*	*11/10/20 08:59*	*11/10/20 16:13*	*100*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**20.3**	**H**	2.00		mg/L			11/19/20 01:08	20
Nitrogen, Nitrate	**21.2**	**H**	2.00		mg/L			11/19/20 13:05	20

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**29.2**		5.00		mg/L			11/07/20 16:11	5

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**455**		2.00		mg/L		11/10/20 03:21	11/16/20 07:49	10

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19766-1

Client Sample ID: BOP-77i-1120

Lab Sample ID: 410-19766-6

Date Collected: 11/05/20 12:40
Matrix: Water
Date Received: 11/06/20 10:06

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	422		1.03		mg/L		11/10/20 06:40	11/15/20 15:14	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	6990		250		mg/L			12/02/20 00:57	250

Client Sample ID: BOP-88i-1120

Lab Sample ID: 410-19766-7

Date Collected: 11/05/20 14:59
Matrix: Water
Date Received: 11/06/20 10:06

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.00	U	1.00		ug/L			11/16/20 05:06	2
1,1,2,2-Tetrachloroethane	0.400	U	0.400		ug/L			11/16/20 05:06	2
1,1,2-Trichloroethane	0.400	U	0.400		ug/L			11/16/20 05:06	2
1,1-Dichloroethane	1.00	U	1.00		ug/L			11/16/20 05:06	2
1,1-Dichloroethene	0.400	U	0.400		ug/L			11/16/20 05:06	2
1,2-Dichloroethane	0.400	U	0.400		ug/L			11/16/20 05:06	2
1,2-Dichloropropane	1.00	U	1.00		ug/L			11/16/20 05:06	2
2-Butanone	6240	E	10.0		ug/L			11/16/20 05:06	2
2-Hexanone	54.1		10.0		ug/L			11/16/20 05:06	2
4-Methyl-2-pentanone	10.0	U	10.0		ug/L			11/16/20 05:06	2
Acetone	78.4		10.0		ug/L			11/16/20 05:06	2
Benzene	1.07		0.400		ug/L			11/16/20 05:06	2
Bromodichloromethane	1.00	U	1.00		ug/L			11/16/20 05:06	2
Bromoform	2.00	U	2.00		ug/L			11/16/20 05:06	2
Bromomethane	1.00	U	1.00		ug/L			11/16/20 05:06	2
Carbon disulfide	1.00	U	1.00		ug/L			11/16/20 05:06	2
Carbon tetrachloride	0.400	U	0.400		ug/L			11/16/20 05:06	2
Chlorobenzene	1.00	U	1.00		ug/L			11/16/20 05:06	2
Chloroethane	1.00	U	1.00		ug/L			11/16/20 05:06	2
Chloroform	0.557		0.400		ug/L			11/16/20 05:06	2
Chloromethane	7.06		1.00		ug/L			11/16/20 05:06	2
cis-1,2-Dichloroethene	43.5		0.400		ug/L			11/16/20 05:06	2
cis-1,3-Dichloropropene	0.400	U	0.400		ug/L			11/16/20 05:06	2
Dibromochloromethane	1.00	U	1.00		ug/L			11/16/20 05:06	2
Ethylbenzene	1.00	U	1.00		ug/L			11/16/20 05:06	2
Freon 113	1.00	U	1.00		ug/L			11/16/20 05:06	2
m&p-Xylene	1.00	U	1.00		ug/L			11/16/20 05:06	2
Methylene Chloride	1.00	U	1.00		ug/L			11/16/20 05:06	2
o-Xylene	1.00	U	1.00		ug/L			11/16/20 05:06	2
Styrene	1.00	U	1.00		ug/L			11/16/20 05:06	2
Tetrachloroethene	0.400	U	0.400		ug/L			11/16/20 05:06	2
Toluene	0.400	U	0.400		ug/L			11/16/20 05:06	2
trans-1,2-Dichloroethene	0.400	U	0.400		ug/L			11/16/20 05:06	2
trans-1,3-Dichloropropene	0.400	U	0.400		ug/L			11/16/20 05:06	2
Trichloroethene	0.933		0.400		ug/L			11/16/20 05:06	2
Trichlorofluoromethane	1.00	U	1.00		ug/L			11/16/20 05:06	2
Vinyl acetate	1.00	U	1.00		ug/L			11/16/20 05:06	2
Vinyl chloride	3.67		0.400		ug/L			11/16/20 05:06	2

Client Sample ID: BOP-88i-1120

Date Collected: 11/05/20 14:59
Date Received: 11/06/20 10:06

Lab Sample ID: 410-19766-7

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*11/16/20 05:06*	*2*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*11/16/20 05:06*	*2*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/16/20 05:06*	*2*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/16/20 05:06*	*2*

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	50.0	U	50.0	ug/L			11/17/20 00:40	100
1,1,2,2-Tetrachloroethane	20.0	U	20.0	ug/L			11/17/20 00:40	100
1,1,2-Trichloroethane	20.0	U	20.0	ug/L			11/17/20 00:40	100
1,1-Dichloroethane	50.0	U	50.0	ug/L			11/17/20 00:40	100
1,1-Dichloroethene	20.0	U	20.0	ug/L			11/17/20 00:40	100
1,2-Dichloroethane	20.0	U	20.0	ug/L			11/17/20 00:40	100
1,2-Dichloropropane	50.0	U	50.0	ug/L			11/17/20 00:40	100
2-Butanone	**7610**		500	ug/L			11/17/20 00:40	100
2-Hexanone	500	U	500	ug/L			11/17/20 00:40	100
4-Methyl-2-pentanone	500	U	500	ug/L			11/17/20 00:40	100
Acetone	500	U	500	ug/L			11/17/20 00:40	100
Benzene	20.0	U	20.0	ug/L			11/17/20 00:40	100
Bromodichloromethane	50.0	U	50.0	ug/L			11/17/20 00:40	100
Bromoform	100	U	100	ug/L			11/17/20 00:40	100
Bromomethane	50.0	U	50.0	ug/L			11/17/20 00:40	100
Carbon disulfide	50.0	U	50.0	ug/L			11/17/20 00:40	100
Carbon tetrachloride	20.0	U	20.0	ug/L			11/17/20 00:40	100
Chlorobenzene	50.0	U	50.0	ug/L			11/17/20 00:40	100
Chloroethane	50.0	U	50.0	ug/L			11/17/20 00:40	100
Chloroform	20.0	U	20.0	ug/L			11/17/20 00:40	100
Chloromethane	50.0	U	50.0	ug/L			11/17/20 00:40	100
cis-1,2-Dichloroethene	**45.1**		20.0	ug/L			11/17/20 00:40	100
cis-1,3-Dichloropropene	20.0	U	20.0	ug/L			11/17/20 00:40	100
Dibromochloromethane	50.0	U	50.0	ug/L			11/17/20 00:40	100
Ethylbenzene	50.0	U	50.0	ug/L			11/17/20 00:40	100
Freon 113	50.0	U	50.0	ug/L			11/17/20 00:40	100
m&p-Xylene	50.0	U	50.0	ug/L			11/17/20 00:40	100
Methylene Chloride	50.0	U	50.0	ug/L			11/17/20 00:40	100
o-Xylene	50.0	U	50.0	ug/L			11/17/20 00:40	100
Styrene	50.0	U	50.0	ug/L			11/17/20 00:40	100
Tetrachloroethene	20.0	U	20.0	ug/L			11/17/20 00:40	100
Toluene	20.0	U	20.0	ug/L			11/17/20 00:40	100
trans-1,2-Dichloroethene	20.0	U	20.0	ug/L			11/17/20 00:40	100
trans-1,3-Dichloropropene	20.0	U	20.0	ug/L			11/17/20 00:40	100
Trichloroethene	20.0	U	20.0	ug/L			11/17/20 00:40	100
Trichlorofluoromethane	50.0	U	50.0	ug/L			11/17/20 00:40	100
Vinyl acetate	50.0	U	50.0	ug/L			11/17/20 00:40	100
Vinyl chloride	20.0	U	20.0	ug/L			11/17/20 00:40	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/17/20 00:40*	*100*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/17/20 00:40*	*100*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*11/17/20 00:40*	*100*

Client Sample ID: BOP-88i-1120

Date Collected: 11/05/20 14:59
Date Received: 11/06/20 10:06

Lab Sample ID: 410-19766-7

Matrix: Water

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/17/20 00:40*	*100*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00	ug/L		11/07/20 13:52	11/07/20 23:48	1
Ethane (1C)	**63.4**		5.00	ug/L		11/07/20 13:52	11/07/20 23:48	1
Ethene (1C)	**98.9**		5.00	ug/L		11/07/20 13:52	11/07/20 23:48	1
Methane (1C)	**9640**	**E**	5.00	ug/L		11/07/20 13:52	11/07/20 23:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*879*	*X*	*28 - 140*	*11/07/20 13:52*	*11/07/20 23:48*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	250	U	250	ug/L		11/10/20 08:59	11/10/20 16:32	50
Ethane (1C)	250	U	250	ug/L		11/10/20 08:59	11/10/20 16:32	50
Ethene (1C)	250	U	250	ug/L		11/10/20 08:59	11/10/20 16:32	50
Methane (1C)	**12000**		250	ug/L		11/10/20 08:59	11/10/20 16:32	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*117*		*28 - 140*	*11/10/20 08:59*	*11/10/20 16:32*	*50*

Method: RSK-175 - Dissolved Gases (GC) - RA

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00	ug/L		11/10/20 08:59	11/10/20 17:09	1
Ethane (1C)	**60.8**		5.00	ug/L		11/10/20 08:59	11/10/20 17:09	1
Ethene (1C)	**95.7**		5.00	ug/L		11/10/20 08:59	11/10/20 17:09	1
Methane (1C)	**9000**	**E**	5.00	ug/L		11/10/20 08:59	11/10/20 17:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*899*	*X*	*28 - 140*	*11/10/20 08:59*	*11/10/20 17:09*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**0.888**		0.500	mg/L			11/07/20 16:48	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**162**		20.0	mg/L			11/24/20 23:38	20

Method: 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**5120**		5.00	mg/L		11/13/20 02:36	11/17/20 12:58	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**264**		0.206	mg/L		11/19/20 17:20	11/20/20 11:38	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**20100**		500	mg/L			12/02/20 02:28	500

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19766-1

Client Sample ID: Trip Blanks

Date Collected: 11/05/20 00:00
Date Received: 11/06/20 10:06

Lab Sample ID: 410-19766-8

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			11/15/20 21:37	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/15/20 21:37	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/15/20 21:37	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/15/20 21:37	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/15/20 21:37	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/15/20 21:37	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/15/20 21:37	1
2-Butanone	5.00	U	5.00		ug/L			11/15/20 21:37	1
2-Hexanone	5.00	U	5.00		ug/L			11/15/20 21:37	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/15/20 21:37	1
Acetone	5.00	U	5.00		ug/L			11/15/20 21:37	1
Benzene	0.200	U	0.200		ug/L			11/15/20 21:37	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/15/20 21:37	1
Bromoform	1.00	U	1.00		ug/L			11/15/20 21:37	1
Bromomethane	0.500	U	0.500		ug/L			11/15/20 21:37	1
Carbon disulfide	0.500	U	0.500		ug/L			11/15/20 21:37	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/15/20 21:37	1
Chlorobenzene	0.500	U	0.500		ug/L			11/15/20 21:37	1
Chloroethane	0.500	U	0.500		ug/L			11/15/20 21:37	1
Chloroform	0.200	U	0.200		ug/L			11/15/20 21:37	1
Chloromethane	0.500	U	0.500		ug/L			11/15/20 21:37	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/15/20 21:37	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/15/20 21:37	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/15/20 21:37	1
Ethylbenzene	0.500	U	0.500		ug/L			11/15/20 21:37	1
Freon 113	0.500	U	0.500		ug/L			11/15/20 21:37	1
m&p-Xylene	0.500	U	0.500		ug/L			11/15/20 21:37	1
Methylene Chloride	0.500	U	0.500		ug/L			11/15/20 21:37	1
o-Xylene	0.500	U	0.500		ug/L			11/15/20 21:37	1
Styrene	0.500	U	0.500		ug/L			11/15/20 21:37	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/15/20 21:37	1
Toluene	0.200	U	0.200		ug/L			11/15/20 21:37	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/15/20 21:37	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/15/20 21:37	1
Trichloroethene	0.200	U	0.200		ug/L			11/15/20 21:37	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/15/20 21:37	1
Vinyl acetate	0.500	U	0.500		ug/L			11/15/20 21:37	1
Vinyl chloride	0.200	U	0.200		ug/L			11/15/20 21:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*11/15/20 21:37*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/15/20 21:37*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*11/15/20 21:37*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/15/20 21:37*	*1*

Surrogate Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19766-1

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)
410-19766-1	BOP-72i-1120	104	97	95	99
410-19766-2 - DL	BOP-73i-1120	104	98	95	100
410-19766-2	BOP-73i-1120	103	97	96	99
410-19766-3	BOP-74i-1120	99	94	96	100
410-19766-3 - DL	BOP-74i-1120	98	94	98	102
410-19766-4	BOP-75i-1120	101	97	95	99
410-19766-4 - DL	BOP-75i-1120	99	93	98	103
410-19766-5	BOP-76i-1120	101	94	96	99
410-19766-5 - DL	BOP-76i-1120	98	94	98	103
410-19766-6	BOP-77i-1120	99	94	97	99
410-19766-6 - DL	BOP-77i-1120	102	97	97	100
410-19766-7	BOP-88i-1120	102	95	97	100
410-19766-7 - DL	BOP-88i-1120	97	93	96	102
410-19766-8	Trip Blanks	103	98	94	99
LCS 410-66213/5	Lab Control Sample	101	95	97	100
LCS 410-66213/7	Lab Control Sample	101	96	97	99
LCS 410-66620/5	Lab Control Sample	96	91	97	103
LCS 410-66620/7	Lab Control Sample	97	92	98	103
LCS 410-67216/5	Lab Control Sample	101	94	97	100
LCS 410-67216/7	Lab Control Sample	103	95	98	99
LCSD 410-66213/6	Lab Control Sample Dup	103	95	97	100
LCSD 410-66213/8	Lab Control Sample Dup	105	96	98	99
LCSD 410-66620/6	Lab Control Sample Dup	95	92	98	102
LCSD 410-66620/8	Lab Control Sample Dup	97	94	98	104
LCSD 410-67216/6	Lab Control Sample Dup	101	95	97	100
LCSD 410-67216/8	Lab Control Sample Dup	101	96	97	99
MB 410-66213/10	Method Blank	103	98	94	100
MB 410-66620/10	Method Blank	100	93	95	102
MB 410-67216/10	Method Blank	104	97	94	101

Surrogate Legend

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

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		Propene1
Lab Sample ID	Client Sample ID	(28-140)
410-19766-1	BOP-72i-1120	75
410-19766-1 - DL	BOP-72i-1120	104
410-19766-2	BOP-73i-1120	78
410-19766-2 - DL	BOP-73i-1120	105
410-19766-3	BOP-74i-1120	92
410-19766-3 - DL	BOP-74i-1120	102
410-19766-4	BOP-75i-1120	78
410-19766-4 - DL	BOP-75i-1120	103

Surrogate Summary

Client: Landau & Associates, Inc. Job ID: 410-19766-1
Project/Site: Boeing of Portland 0025116.120.412

Method: RSK-175 - Dissolved Gases (GC) (Continued)

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

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	Propene1 (28-140)						
410-19766-5	BOP-76i-1120	139						
410-19766-5 - DL	BOP-76i-1120	107						
410-19766-6	BOP-77i-1120	101						
410-19766-6 - DL	BOP-77i-1120	103						
410-19766-7	BOP-88i-1120	879 X						
410-19766-7 - DL	BOP-88i-1120	117						
410-19766-7 - RA	BOP-88i-1120	899 X						
LCS 410-63297/2-A	Lab Control Sample	104						
LCS 410-64147/2-A	Lab Control Sample	109						
MB 410-63297/1-A	Method Blank	104						
MB 410-64147/1-A	Method Blank	125						

Surrogate Legend

Propene = Propene

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19766-1

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

Lab Sample ID: MB 410-66213/10
Matrix: Water
Analysis Batch: 66213

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			11/15/20 21:16	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/15/20 21:16	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/15/20 21:16	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/15/20 21:16	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/15/20 21:16	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/15/20 21:16	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/15/20 21:16	1
2-Butanone	5.00	U	5.00		ug/L			11/15/20 21:16	1
2-Hexanone	5.00	U	5.00		ug/L			11/15/20 21:16	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/15/20 21:16	1
Acetone	5.00	U	5.00		ug/L			11/15/20 21:16	1
Benzene	0.200	U	0.200		ug/L			11/15/20 21:16	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/15/20 21:16	1
Bromoform	1.00	U	1.00		ug/L			11/15/20 21:16	1
Bromomethane	0.500	U	0.500		ug/L			11/15/20 21:16	1
Carbon disulfide	0.500	U	0.500		ug/L			11/15/20 21:16	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/15/20 21:16	1
Chlorobenzene	0.500	U	0.500		ug/L			11/15/20 21:16	1
Chloroethane	0.500	U	0.500		ug/L			11/15/20 21:16	1
Chloroform	0.200	U	0.200		ug/L			11/15/20 21:16	1
Chloromethane	0.500	U	0.500		ug/L			11/15/20 21:16	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/15/20 21:16	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/15/20 21:16	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/15/20 21:16	1
Ethylbenzene	0.500	U	0.500		ug/L			11/15/20 21:16	1
Freon 113	0.500	U	0.500		ug/L			11/15/20 21:16	1
m&p-Xylene	0.500	U	0.500		ug/L			11/15/20 21:16	1
Methylene Chloride	0.500	U	0.500		ug/L			11/15/20 21:16	1
o-Xylene	0.500	U	0.500		ug/L			11/15/20 21:16	1
Styrene	0.500	U	0.500		ug/L			11/15/20 21:16	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/15/20 21:16	1
Toluene	0.200	U	0.200		ug/L			11/15/20 21:16	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/15/20 21:16	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/15/20 21:16	1
Trichloroethene	0.200	U	0.200		ug/L			11/15/20 21:16	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/15/20 21:16	1
Vinyl acetate	0.500	U	0.500		ug/L			11/15/20 21:16	1
Vinyl chloride	0.200	U	0.200		ug/L			11/15/20 21:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*11/15/20 21:16*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/15/20 21:16*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*11/15/20 21:16*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/15/20 21:16*	*1*

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

Lab Sample ID: LCS 410-66213/5
Matrix: Water
Analysis Batch: 66213

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	4.101		ug/L		82	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.672		ug/L		113	75 - 123
1,1,2-Trichloroethane	5.00	5.573		ug/L		111	80 - 120
1,1-Dichloroethane	5.00	4.787		ug/L		96	74 - 120
1,1-Dichloroethene	5.00	4.150		ug/L		83	80 - 131
1,2-Dichloroethane	5.00	4.751		ug/L		95	69 - 122
1,2-Dichloropropane	5.00	5.174		ug/L		103	80 - 120
2-Butanone	37.5	40.91		ug/L		109	59 - 141
2-Hexanone	25.0	25.84		ug/L		103	52 - 140
4-Methyl-2-pentanone	25.0	25.29		ug/L		101	55 - 140
Acetone	37.5	36.74		ug/L		98	60 - 146
Benzene	5.00	4.700		ug/L		94	80 - 120
Bromodichloromethane	5.00	4.993		ug/L		100	73 - 124
Bromoform	5.00	5.047		ug/L		101	49 - 144
Bromomethane	5.00	3.224		ug/L		64	60 - 136
Carbon disulfide	5.00	4.246		ug/L		85	67 - 130
Carbon tetrachloride	5.00	4.018		ug/L		80	64 - 141
Chlorobenzene	5.00	4.750		ug/L		95	80 - 120
Chloroethane	5.00	3.480		ug/L		70	63 - 120
Chloroform	5.00	4.648		ug/L		93	80 - 120
Chloromethane	5.00	3.560		ug/L		71	56 - 124
cis-1,2-Dichloroethene	5.00	4.712		ug/L		94	80 - 122
cis-1,3-Dichloropropene	5.00	4.860		ug/L		97	67 - 121
Dibromochloromethane	5.00	5.398		ug/L		108	64 - 138
Ethylbenzene	5.00	4.755		ug/L		95	80 - 120
Freon 113	5.00	4.048		ug/L		81	75 - 133
m&p-Xylene	10.0	9.236		ug/L		92	80 - 120
Methylene Chloride	5.00	4.828		ug/L		97	80 - 120
o-Xylene	5.00	4.528		ug/L		91	80 - 120
Styrene	5.00	4.790		ug/L		96	80 - 120
Tetrachloroethene	5.00	4.668		ug/L		93	80 - 120
Toluene	5.00	4.722		ug/L		94	80 - 120
trans-1,2-Dichloroethene	5.00	4.294		ug/L		86	80 - 122
trans-1,3-Dichloropropene	5.00	5.104		ug/L		102	61 - 129
Trichloroethene	5.00	4.320		ug/L		86	80 - 120
Trichlorofluoromethane	5.00	3.548		ug/L		71	62 - 136
Vinyl chloride	5.00	3.514		ug/L		70	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

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

Lab Sample ID: LCS 410-66213/7
Matrix: Water
Analysis Batch: 66213

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	15.32		ug/L		123	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 410-66213/6
Matrix: Water
Analysis Batch: 66213

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	4.053		ug/L		81	78 - 126	1	30
1,1,2,2-Tetrachloroethane			5.00	5.652		ug/L		113	75 - 123	0	30
1,1,2-Trichloroethane			5.00	5.483		ug/L		110	80 - 120	2	30
1,1-Dichloroethane			5.00	4.763		ug/L		95	74 - 120	0	30
1,1-Dichloroethene			5.00	4.181		ug/L		84	80 - 131	1	30
1,2-Dichloroethane			5.00	4.739		ug/L		95	69 - 122	0	30
1,2-Dichloropropane			5.00	5.117		ug/L		102	80 - 120	1	30
2-Butanone			37.5	42.32		ug/L		113	59 - 141	3	30
2-Hexanone			25.0	27.01		ug/L		108	52 - 140	4	30
4-Methyl-2-pentanone			25.0	26.30		ug/L		105	55 - 140	4	30
Acetone			37.5	37.93		ug/L		101	60 - 146	3	30
Benzene			5.00	4.629		ug/L		93	80 - 120	2	30
Bromodichloromethane			5.00	4.884		ug/L		98	73 - 124	2	30
Bromoform			5.00	5.066		ug/L		101	49 - 144	0	30
Bromomethane			5.00	3.160		ug/L		63	60 - 136	2	30
Carbon disulfide			5.00	4.155		ug/L		83	67 - 130	2	30
Carbon tetrachloride			5.00	3.973		ug/L		79	64 - 141	1	30
Chlorobenzene			5.00	4.774		ug/L		95	80 - 120	0	30
Chloroethane			5.00	3.353		ug/L		67	63 - 120	4	30
Chloroform			5.00	4.623		ug/L		92	80 - 120	1	30
Chloromethane			5.00	3.470		ug/L		69	56 - 124	3	30
cis-1,2-Dichloroethene			5.00	4.720		ug/L		94	80 - 122	0	30
cis-1,3-Dichloropropene			5.00	4.783		ug/L		96	67 - 121	2	30
Dibromochloromethane			5.00	5.264		ug/L		105	64 - 138	3	30
Ethylbenzene			5.00	4.701		ug/L		94	80 - 120	1	30
Freon 113			5.00	3.957		ug/L		79	75 - 133	2	30
m&p-Xylene			10.0	9.221		ug/L		92	80 - 120	0	30
Methylene Chloride			5.00	4.800		ug/L		96	80 - 120	1	30
o-Xylene			5.00	4.484		ug/L		90	80 - 120	1	30
Styrene			5.00	4.753		ug/L		95	80 - 120	1	30
Tetrachloroethene			5.00	4.632		ug/L		93	80 - 120	1	30
Toluene			5.00	4.624		ug/L		92	80 - 120	2	30
trans-1,2-Dichloroethene			5.00	4.317		ug/L		86	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	5.091		ug/L		102	61 - 129	0	30
Trichloroethene			5.00	4.303		ug/L		86	80 - 120	0	30

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

Lab Sample ID: LCSD 410-66213/6
Matrix: Water
Analysis Batch: 66213

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	3.582		ug/L		72	62 - 136	1	30
Vinyl chloride			5.00	3.460		ug/L		69	60 - 125	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-66213/8
Matrix: Water
Analysis Batch: 66213

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	15.03		ug/L		120	38 - 145	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: MB 410-66620/10
Matrix: Water
Analysis Batch: 66620

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			11/16/20 21:43	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/16/20 21:43	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/16/20 21:43	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 21:43	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/16/20 21:43	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/16/20 21:43	1
2-Butanone	5.00	U	5.00		ug/L			11/16/20 21:43	1
2-Hexanone	5.00	U	5.00		ug/L			11/16/20 21:43	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/16/20 21:43	1
Acetone	5.00	U	5.00		ug/L			11/16/20 21:43	1
Benzene	0.200	U	0.200		ug/L			11/16/20 21:43	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
Bromoform	1.00	U	1.00		ug/L			11/16/20 21:43	1
Bromomethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
Carbon disulfide	0.500	U	0.500		ug/L			11/16/20 21:43	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/16/20 21:43	1
Chlorobenzene	0.500	U	0.500		ug/L			11/16/20 21:43	1
Chloroethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
Chloroform	0.200	U	0.200		ug/L			11/16/20 21:43	1
Chloromethane	0.500	U	0.500		ug/L			11/16/20 21:43	1

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

Lab Sample ID: MB 410-66620/10
Matrix: Water
Analysis Batch: 66620

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			11/16/20 21:43	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/16/20 21:43	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
Ethylbenzene	0.500	U	0.500		ug/L			11/16/20 21:43	1
Freon 113	0.500	U	0.500		ug/L			11/16/20 21:43	1
m&p-Xylene	0.500	U	0.500		ug/L			11/16/20 21:43	1
Methylene Chloride	0.500	U	0.500		ug/L			11/16/20 21:43	1
o-Xylene	0.500	U	0.500		ug/L			11/16/20 21:43	1
Styrene	0.500	U	0.500		ug/L			11/16/20 21:43	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/16/20 21:43	1
Toluene	0.200	U	0.200		ug/L			11/16/20 21:43	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 21:43	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/16/20 21:43	1
Trichloroethene	0.200	U	0.200		ug/L			11/16/20 21:43	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
Vinyl acetate	0.500	U	0.500		ug/L			11/16/20 21:43	1
Vinyl chloride	0.200	U	0.200		ug/L			11/16/20 21:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*11/16/20 21:43*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/16/20 21:43*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*11/16/20 21:43*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/16/20 21:43*	*1*

Lab Sample ID: LCS 410-66620/5
Matrix: Water
Analysis Batch: 66620

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	4.196		ug/L		84	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.252		ug/L		105	75 - 123
1,1,2-Trichloroethane	5.00	4.892		ug/L		98	80 - 120
1,1-Dichloroethane	5.00	4.764		ug/L		95	74 - 120
1,1-Dichloroethene	5.00	4.988		ug/L		100	80 - 131
1,2-Dichloroethane	5.00	4.223		ug/L		84	69 - 122
1,2-Dichloropropane	5.00	5.077		ug/L		102	80 - 120
2-Butanone	37.5	34.85		ug/L		93	59 - 141
2-Hexanone	25.0	24.64		ug/L		99	52 - 140
4-Methyl-2-pentanone	25.0	24.53		ug/L		98	55 - 140
Acetone	37.5	30.04		ug/L		80	60 - 146
Benzene	5.00	4.897		ug/L		98	80 - 120
Bromodichloromethane	5.00	4.605		ug/L		92	73 - 124
Bromoform	5.00	4.314		ug/L		86	49 - 144
Bromomethane	5.00	4.212		ug/L		84	60 - 136
Carbon disulfide	5.00	5.002		ug/L		100	67 - 130
Carbon tetrachloride	5.00	4.120		ug/L		82	64 - 141
Chlorobenzene	5.00	4.787		ug/L		96	80 - 120
Chloroethane	5.00	4.645		ug/L		93	63 - 120

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

Lab Sample ID: LCS 410-66620/5
Matrix: Water
Analysis Batch: 66620

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	4.559		ug/L		91	80 - 120		
Chloromethane			5.00	4.101		ug/L		82	56 - 124		
cis-1,2-Dichloroethene			5.00	5.078		ug/L		102	80 - 122		
cis-1,3-Dichloropropene			5.00	4.738		ug/L		95	67 - 121		
Dibromochloromethane			5.00	4.668		ug/L		93	64 - 138		
Ethylbenzene			5.00	4.707		ug/L		94	80 - 120		
Freon 113			5.00	4.665		ug/L		93	75 - 133		
m&p-Xylene			10.0	9.792		ug/L		98	80 - 120		
Methylene Chloride			5.00	5.055		ug/L		101	80 - 120		
o-Xylene			5.00	4.852		ug/L		97	80 - 120		
Styrene			5.00	4.925		ug/L		98	80 - 120		
Tetrachloroethene			5.00	4.668		ug/L		93	80 - 120		
Toluene			5.00	4.974		ug/L		99	80 - 120		
trans-1,2-Dichloroethene			5.00	4.912		ug/L		98	80 - 122		
trans-1,3-Dichloropropene			5.00	4.657		ug/L		93	61 - 129		
Trichloroethene			5.00	4.581		ug/L		92	80 - 120		
Trichlorofluoromethane			5.00	4.209		ug/L		84	62 - 136		
Vinyl chloride			5.00	4.504		ug/L		90	60 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*
Dibromofluoromethane (Surr)	*91*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCS 410-66620/7
Matrix: Water
Analysis Batch: 66620

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	11.29		ug/L		90	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 410-66620/6
Matrix: Water
Analysis Batch: 66620

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	4.206		ug/L		84	78 - 126	0	30
1,1,2,2-Tetrachloroethane			5.00	5.155		ug/L		103	75 - 123	2	30
1,1,2-Trichloroethane			5.00	4.910		ug/L		98	80 - 120	0	30
1,1-Dichloroethane			5.00	4.755		ug/L		95	74 - 120	0	30
1,1-Dichloroethene			5.00	4.995		ug/L		100	80 - 131	0	30

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

Lab Sample ID: LCSD 410-66620/6
Matrix: Water
Analysis Batch: 66620

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	4.127		ug/L		83	69 - 122	2	30
1,2-Dichloropropane			5.00	5.055		ug/L		101	80 - 120	0	30
2-Butanone			37.5	37.58		ug/L		100	59 - 141	8	30
2-Hexanone			25.0	26.83		ug/L		107	52 - 140	9	30
4-Methyl-2-pentanone			25.0	25.79		ug/L		103	55 - 140	5	30
Acetone			37.5	31.34		ug/L		84	60 - 146	4	30
Benzene			5.00	4.863		ug/L		97	80 - 120	1	30
Bromodichloromethane			5.00	4.541		ug/L		91	73 - 124	1	30
Bromoform			5.00	4.138		ug/L		83	49 - 144	4	30
Bromomethane			5.00	4.203		ug/L		84	60 - 136	0	30
Carbon disulfide			5.00	5.012		ug/L		100	67 - 130	0	30
Carbon tetrachloride			5.00	4.037		ug/L		81	64 - 141	2	30
Chlorobenzene			5.00	4.742		ug/L		95	80 - 120	1	30
Chloroethane			5.00	4.544		ug/L		91	63 - 120	2	30
Chloroform			5.00	4.520		ug/L		90	80 - 120	1	30
Chloromethane			5.00	4.101		ug/L		82	56 - 124	0	30
cis-1,2-Dichloroethene			5.00	4.982		ug/L		100	80 - 122	2	30
cis-1,3-Dichloropropene			5.00	4.686		ug/L		94	67 - 121	1	30
Dibromochloromethane			5.00	4.674		ug/L		93	64 - 138	0	30
Ethylbenzene			5.00	4.753		ug/L		95	80 - 120	1	30
Freon 113			5.00	4.588		ug/L		92	75 - 133	2	30
m&p-Xylene			10.0	9.864		ug/L		99	80 - 120	1	30
Methylene Chloride			5.00	4.953		ug/L		99	80 - 120	2	30
o-Xylene			5.00	4.879		ug/L		98	80 - 120	1	30
Styrene			5.00	5.024		ug/L		100	80 - 120	2	30
Tetrachloroethene			5.00	4.622		ug/L		92	80 - 120	1	30
Toluene			5.00	5.039		ug/L		101	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	4.943		ug/L		99	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	4.661		ug/L		93	61 - 129	0	30
Trichloroethene			5.00	4.680		ug/L		94	80 - 120	2	30
Trichlorofluoromethane			5.00	4.191		ug/L		84	62 - 136	0	30
Vinyl chloride			5.00	4.452		ug/L		89	60 - 125	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-66620/8
Matrix: Water
Analysis Batch: 66620

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	11.31		ug/L		90	38 - 145	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*

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

Lab Sample ID: LCSD 410-66620/8
Matrix: Water
Analysis Batch: 66620

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

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: MB 410-67216/10
Matrix: Water
Analysis Batch: 67216

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			11/18/20 00:26	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/18/20 00:26	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/18/20 00:26	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/18/20 00:26	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/18/20 00:26	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/18/20 00:26	1
2-Butanone	5.00	U	5.00		ug/L			11/18/20 00:26	1
2-Hexanone	5.00	U	5.00		ug/L			11/18/20 00:26	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/18/20 00:26	1
Acetone	5.00	U	5.00		ug/L			11/18/20 00:26	1
Benzene	0.200	U	0.200		ug/L			11/18/20 00:26	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
Bromoform	1.00	U	1.00		ug/L			11/18/20 00:26	1
Bromomethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
Carbon disulfide	0.500	U	0.500		ug/L			11/18/20 00:26	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/18/20 00:26	1
Chlorobenzene	0.500	U	0.500		ug/L			11/18/20 00:26	1
Chloroethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
Chloroform	0.200	U	0.200		ug/L			11/18/20 00:26	1
Chloromethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/18/20 00:26	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/18/20 00:26	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
Ethylbenzene	0.500	U	0.500		ug/L			11/18/20 00:26	1
Freon 113	0.500	U	0.500		ug/L			11/18/20 00:26	1
m&p-Xylene	0.500	U	0.500		ug/L			11/18/20 00:26	1
Methylene Chloride	0.500	U	0.500		ug/L			11/18/20 00:26	1
o-Xylene	0.500	U	0.500		ug/L			11/18/20 00:26	1
Styrene	0.500	U	0.500		ug/L			11/18/20 00:26	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/18/20 00:26	1
Toluene	0.200	U	0.200		ug/L			11/18/20 00:26	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/18/20 00:26	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/18/20 00:26	1
Trichloroethene	0.200	U	0.200		ug/L			11/18/20 00:26	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
Vinyl acetate	0.500	U	0.500		ug/L			11/18/20 00:26	1
Vinyl chloride	0.200	U	0.200		ug/L			11/18/20 00:26	1

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

Lab Sample ID: MB 410-67216/10
Matrix: Water
Analysis Batch: 67216

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*11/18/20 00:26*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*11/18/20 00:26*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*11/18/20 00:26*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/18/20 00:26*	*1*

Lab Sample ID: LCS 410-67216/5
Matrix: Water
Analysis Batch: 67216

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	4.443		ug/L		89	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.489		ug/L		110	75 - 123
1,1,2-Trichloroethane	5.00	5.607		ug/L		112	80 - 120
1,1-Dichloroethane	5.00	5.306		ug/L		106	74 - 120
1,1-Dichloroethene	5.00	5.051		ug/L		101	80 - 131
1,2-Dichloroethane	5.00	4.871		ug/L		97	69 - 122
1,2-Dichloropropane	5.00	5.483		ug/L		110	80 - 120
2-Butanone	37.5	41.52		ug/L		111	59 - 141
2-Hexanone	25.0	25.98		ug/L		104	52 - 140
4-Methyl-2-pentanone	25.0	25.49		ug/L		102	55 - 140
Acetone	37.5	36.89		ug/L		98	60 - 146
Benzene	5.00	5.147		ug/L		103	80 - 120
Bromodichloromethane	5.00	4.959		ug/L		99	73 - 124
Bromoform	5.00	4.737		ug/L		95	49 - 144
Bromomethane	5.00	3.348		ug/L		67	60 - 136
Carbon disulfide	5.00	5.272		ug/L		105	67 - 130
Carbon tetrachloride	5.00	4.433		ug/L		89	64 - 141
Chlorobenzene	5.00	5.024		ug/L		100	80 - 120
Chloroethane	5.00	3.559		ug/L		71	63 - 120
Chloroform	5.00	4.919		ug/L		98	80 - 120
Chloromethane	5.00	3.538		ug/L		71	56 - 124
cis-1,2-Dichloroethene	5.00	5.162		ug/L		103	80 - 122
cis-1,3-Dichloropropene	5.00	4.842		ug/L		97	67 - 121
Dibromochloromethane	5.00	5.108		ug/L		102	64 - 138
Ethylbenzene	5.00	5.077		ug/L		102	80 - 120
Freon 113	5.00	4.967		ug/L		99	75 - 133
m&p-Xylene	10.0	9.771		ug/L		98	80 - 120
Methylene Chloride	5.00	5.300		ug/L		106	80 - 120
o-Xylene	5.00	4.749		ug/L		95	80 - 120
Styrene	5.00	4.970		ug/L		99	80 - 120
Tetrachloroethene	5.00	5.008		ug/L		100	80 - 120
Toluene	5.00	4.984		ug/L		100	80 - 120
trans-1,2-Dichloroethene	5.00	4.924		ug/L		98	80 - 122
trans-1,3-Dichloropropene	5.00	5.021		ug/L		100	61 - 129
Trichloroethene	5.00	4.795		ug/L		96	80 - 120
Trichlorofluoromethane	5.00	3.891		ug/L		78	62 - 136
Vinyl chloride	5.00	3.580		ug/L		72	60 - 125

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

Lab Sample ID: LCS 410-67216/5
Matrix: Water
Analysis Batch: 67216

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 410-67216/7
Matrix: Water
Analysis Batch: 67216

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	14.65		ug/L		117	38 - 145		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 410-67216/6
Matrix: Water
Analysis Batch: 67216

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	4.434		ug/L		89	78 - 126	0	30
1,1,2,2-Tetrachloroethane			5.00	5.508		ug/L		110	75 - 123	0	30
1,1,2-Trichloroethane			5.00	5.541		ug/L		111	80 - 120	1	30
1,1-Dichloroethane			5.00	5.254		ug/L		105	74 - 120	1	30
1,1-Dichloroethene			5.00	5.050		ug/L		101	80 - 131	0	30
1,2-Dichloroethane			5.00	4.765		ug/L		95	69 - 122	2	30
1,2-Dichloropropane			5.00	5.475		ug/L		109	80 - 120	0	30
2-Butanone			37.5	40.55		ug/L		108	59 - 141	2	30
2-Hexanone			25.0	25.90		ug/L		104	52 - 140	0	30
4-Methyl-2-pentanone			25.0	25.41		ug/L		102	55 - 140	0	30
Acetone			37.5	37.42		ug/L		100	60 - 146	1	30
Benzene			5.00	5.096		ug/L		102	80 - 120	1	30
Bromodichloromethane			5.00	4.990		ug/L		100	73 - 124	1	30
Bromoform			5.00	4.662		ug/L		93	49 - 144	2	30
Bromomethane			5.00	3.293		ug/L		66	60 - 136	2	30
Carbon disulfide			5.00	5.249		ug/L		105	67 - 130	0	30
Carbon tetrachloride			5.00	4.414		ug/L		88	64 - 141	0	30
Chlorobenzene			5.00	4.995		ug/L		100	80 - 120	1	30
Chloroethane			5.00	3.496		ug/L		70	63 - 120	2	30
Chloroform			5.00	4.900		ug/L		98	80 - 120	0	30
Chloromethane			5.00	3.617		ug/L		72	56 - 124	2	30
cis-1,2-Dichloroethene			5.00	5.115		ug/L		102	80 - 122	1	30
cis-1,3-Dichloropropene			5.00	4.813		ug/L		96	67 - 121	1	30
Dibromochloromethane			5.00	5.133		ug/L		103	64 - 138	0	30
Ethylbenzene			5.00	5.020		ug/L		100	80 - 120	1	30

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

Lab Sample ID: LCSD 410-67216/6
Matrix: Water
Analysis Batch: 67216

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
Freon 113			5.00	4.854		ug/L		97	75 - 133	2	30
m&p-Xylene			10.0	9.826		ug/L		98	80 - 120	1	30
Methylene Chloride			5.00	5.317		ug/L		106	80 - 120	0	30
o-Xylene			5.00	4.722		ug/L		94	80 - 120	1	30
Styrene			5.00	4.972		ug/L		99	80 - 120	0	30
Tetrachloroethene			5.00	5.068		ug/L		101	80 - 120	1	30
Toluene			5.00	5.010		ug/L		100	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	4.891		ug/L		98	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	5.051		ug/L		101	61 - 129	1	30
Trichloroethene			5.00	4.742		ug/L		95	80 - 120	1	30
Trichlorofluoromethane			5.00	3.818		ug/L		76	62 - 136	2	30
Vinyl chloride			5.00	3.566		ug/L		71	60 - 125	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-67216/8
Matrix: Water
Analysis Batch: 67216

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	15.60		ug/L		125	38 - 145	6	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-63297/1-A
Matrix: Water
Analysis Batch: 63298

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 63297

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/07/20 13:52	11/07/20 18:58	1
Ethane (1C)	5.00	U	5.00		ug/L		11/07/20 13:52	11/07/20 18:58	1
Ethene (1C)	5.00	U	5.00		ug/L		11/07/20 13:52	11/07/20 18:58	1
Methane (1C)	5.00	U	5.00		ug/L		11/07/20 13:52	11/07/20 18:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*104*		*28 - 140*	*11/07/20 13:52*	*11/07/20 18:58*	*1*

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 410-63297/2-A
Matrix: Water
Analysis Batch: 63298

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63297

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acetylene (1C)			51.2	57.73		ug/L		113	57 - 146		
Ethane (1C)			59.4	60.21		ug/L		101	85 - 115		
Ethene (1C)			60.4	61.32		ug/L		102	83 - 115		
Methane (1C)			59.4	63.84		ug/L		107	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*104*		*28 - 140*

Lab Sample ID: MB 410-64147/1-A
Matrix: Water
Analysis Batch: 64175

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 64147

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/10/20 08:59	11/10/20 10:25	1
Ethane (1C)	5.00	U	5.00		ug/L		11/10/20 08:59	11/10/20 10:25	1
Ethene (1C)	5.00	U	5.00		ug/L		11/10/20 08:59	11/10/20 10:25	1
Methane (1C)	5.00	U	5.00		ug/L		11/10/20 08:59	11/10/20 10:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*125*		*28 - 140*	*11/10/20 08:59*	*11/10/20 10:25*	*1*

Lab Sample ID: LCS 410-64147/2-A
Matrix: Water
Analysis Batch: 64175

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64147

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acetylene (1C)			51.2	59.60		ug/L		116	57 - 146		
Ethane (1C)			59.4	62.47		ug/L		105	85 - 115		
Ethene (1C)			60.4	63.61		ug/L		105	83 - 115		
Methane (1C)			59.4	64.96		ug/L		109	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*109*		*28 - 140*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-63706/4
Matrix: Water
Analysis Batch: 63706

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U	0.100		mg/L			11/07/20 12:15	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy (Continued)

Lab Sample ID: LCS 410-63706/3
Matrix: Water
Analysis Batch: 63706

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.7204		mg/L		96	90 - 110		

Lab Sample ID: 410-19766-4 MS
Matrix: Water
Analysis Batch: 63706

Client Sample ID: BOP-75i-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate	0.500	U H	2.50	2.347		mg/L		94	90 - 110		

Lab Sample ID: 410-19766-4 DU
Matrix: Water
Analysis Batch: 63706

Client Sample ID: BOP-75i-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Nitrogen, Nitrate	0.500	U H		0.500	U	mg/L				NC	15

Lab Sample ID: MB 410-63723/4
Matrix: Water
Analysis Batch: 63723

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U	0.100		mg/L			11/07/20 12:51	1

Lab Sample ID: LCS 410-63723/3
Matrix: Water
Analysis Batch: 63723

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.7511		mg/L		100	90 - 110		

Lab Sample ID: MB 410-67696/4
Matrix: Water
Analysis Batch: 67696

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U	0.100		mg/L			11/18/20 13:41	1

Lab Sample ID: LCS 410-67696/3
Matrix: Water
Analysis Batch: 67696

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.7309		mg/L		97	90 - 110		

Lab Sample ID: MB 410-67854/4
Matrix: Water
Analysis Batch: 67854

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U	0.100		mg/L			11/19/20 05:16	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: LCS 410-67854/3
Matrix: Water
Analysis Batch: 67854

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.7177		mg/L		96	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-63707/4
Matrix: Water
Analysis Batch: 63707

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/07/20 12:15	1

Lab Sample ID: LCS 410-63707/3
Matrix: Water
Analysis Batch: 63707

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	6.978		mg/L		93	90 - 110		

Lab Sample ID: MB 410-63722/4
Matrix: Water
Analysis Batch: 63722

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/07/20 12:51	1

Lab Sample ID: LCS 410-63722/3
Matrix: Water
Analysis Batch: 63722

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.542		mg/L		101	90 - 110		

Lab Sample ID: MB 410-67404/4
Matrix: Water
Analysis Batch: 67404

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/18/20 13:38	1

Lab Sample ID: LCS 410-67404/3
Matrix: Water
Analysis Batch: 67404

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.530		mg/L		100	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 410-67517/4
Matrix: Water
Analysis Batch: 67517

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/18/20 13:41	1

Lab Sample ID: LCS 410-67517/3
Matrix: Water
Analysis Batch: 67517

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.648		mg/L		102	90 - 110		

Lab Sample ID: MB 410-67853/4
Matrix: Water
Analysis Batch: 67853

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/19/20 05:16	1

Lab Sample ID: LCS 410-67853/3
Matrix: Water
Analysis Batch: 67853

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.460		mg/L		99	90 - 110		

Lab Sample ID: MB 410-70016/4
Matrix: Water
Analysis Batch: 70016

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/24/20 15:18	1

Lab Sample ID: LCS 410-70016/3
Matrix: Water
Analysis Batch: 70016

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.348		mg/L		98	90 - 110		

Lab Sample ID: MB 410-70074/4
Matrix: Water
Analysis Batch: 70074

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/24/20 19:30	1

Lab Sample ID: LCS 410-70074/3
Matrix: Water
Analysis Batch: 70074

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.750		mg/L		103	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-71059/4
Matrix: Water
Analysis Batch: 71059

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/30/20 13:25	1

Lab Sample ID: LCS 410-71059/3
Matrix: Water
Analysis Batch: 71059

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.468		mg/L		100	90 - 110		

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 410-63378/1-A
Matrix: Water
Analysis Batch: 66468

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 63378

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.206	U	0.206		mg/L		11/08/20 09:35	11/16/20 09:47	1

Lab Sample ID: LCS 410-63378/2-A
Matrix: Water
Analysis Batch: 66468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63378

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			0.402	0.4518		mg/L		112	80 - 120		

Lab Sample ID: MB 410-64062/1-A
Matrix: Water
Analysis Batch: 66188

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 64062

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.206	U	0.206		mg/L		11/10/20 06:40	11/15/20 14:29	1

Lab Sample ID: LCS 410-64062/2-A
Matrix: Water
Analysis Batch: 66188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64062

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			0.402	0.4103		mg/L		102	80 - 120		

Lab Sample ID: MB 410-68250/1-A
Matrix: Water
Analysis Batch: 68692

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 68250

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.206	U	0.206		mg/L		11/19/20 17:20	11/20/20 10:56	1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-68250/2-A
Matrix: Water
Analysis Batch: 68692

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 68250

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.402	0.4447		mg/L		111	80 - 120

Lab Sample ID: MB 410-63488/1-A
Matrix: Water
Analysis Batch: 66469

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 63488

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.200	U	0.200		mg/L		11/09/20 02:52	11/16/20 09:47	1

Lab Sample ID: LCS 410-63488/2-A
Matrix: Water
Analysis Batch: 66469

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 63488

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.402	0.4116		mg/L		102	80 - 120

Lab Sample ID: MB 410-64034/1-A
Matrix: Water
Analysis Batch: 66407

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 64034

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.200	U	0.200		mg/L		11/10/20 03:21	11/16/20 06:41	1

Lab Sample ID: LCS 410-64034/2-A
Matrix: Water
Analysis Batch: 66407

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 64034

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.402	0.4466		mg/L		111	80 - 120

Lab Sample ID: MB 410-65487/1-A
Matrix: Water
Analysis Batch: 67047

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 65487

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.200	U	0.200		mg/L		11/13/20 02:36	11/17/20 11:57	1

Lab Sample ID: LCS 410-65487/2-A
Matrix: Water
Analysis Batch: 67047

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 65487

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.402	0.4190		mg/L		104	80 - 120

Lab Sample ID: 410-19766-4 MS
Matrix: Water
Analysis Batch: 66188

Client Sample ID: BOP-75i-1120
Prep Type: Dissolved
Prep Batch: 64062

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	206		0.402	207.2	4	mg/L		217	75 - 125

Method: 6010D - Metals (ICP)

Lab Sample ID: 410-19766-4 MSD
Matrix: Water
Analysis Batch: 66188

Client Sample ID: BOP-75i-1120
Prep Type: Dissolved
Prep Batch: 64062

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	206		0.402	207.2	4	mg/L		205	75 - 125	0	20

Lab Sample ID: 410-19766-4 DU
Matrix: Water
Analysis Batch: 66188

Client Sample ID: BOP-75i-1120
Prep Type: Dissolved
Prep Batch: 64062

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Iron	206		206.2		mg/L		0.08	20

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-70929/35
Matrix: Water
Analysis Batch: 70929

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00	mg/L			11/26/20 07:14	1

Lab Sample ID: LCS 410-70929/34
Matrix: Water
Analysis Batch: 70929

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	25.16		mg/L		101	91 - 113

Lab Sample ID: MB 410-71707/25
Matrix: Water
Analysis Batch: 71707

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00	mg/L			12/01/20 04:35	1

Lab Sample ID: LCS 410-71707/24
Matrix: Water
Analysis Batch: 71707

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	25.08		mg/L		100	91 - 113

Lab Sample ID: MB 410-72142/4
Matrix: Water
Analysis Batch: 72142

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00	mg/L			12/02/20 00:42	1

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav (Continued)

Lab Sample ID: LCS 410-72142/3
Matrix: Water
Analysis Batch: 72142

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	25.55		mg/L		102	91 - 113		

Lab Sample ID: 410-19766-6 MS
Matrix: Water
Analysis Batch: 72142

Client Sample ID: BOP-77i-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	6990		2500	9566		mg/L		103	91 - 113		

Lab Sample ID: 410-19766-6 DU
Matrix: Water
Analysis Batch: 72142

Client Sample ID: BOP-77i-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	6990			7221		mg/L				3	3

GC/MS VOA

Analysis Batch: 66213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-1	BOP-72i-1120	Total/NA	Water	8260C LL	
410-19766-2 - DL	BOP-73i-1120	Total/NA	Water	8260C LL	
410-19766-3	BOP-74i-1120	Total/NA	Water	8260C LL	
410-19766-4	BOP-75i-1120	Total/NA	Water	8260C LL	
410-19766-5	BOP-76i-1120	Total/NA	Water	8260C LL	
410-19766-6	BOP-77i-1120	Total/NA	Water	8260C LL	
410-19766-6 - DL	BOP-77i-1120	Total/NA	Water	8260C LL	
410-19766-7	BOP-88i-1120	Total/NA	Water	8260C LL	
410-19766-8	Trip Blanks	Total/NA	Water	8260C LL	
MB 410-66213/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-66213/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-66213/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-66213/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-66213/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Analysis Batch: 66620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-3 - DL	BOP-74i-1120	Total/NA	Water	8260C LL	
410-19766-4 - DL	BOP-75i-1120	Total/NA	Water	8260C LL	
410-19766-5 - DL	BOP-76i-1120	Total/NA	Water	8260C LL	
410-19766-7 - DL	BOP-88i-1120	Total/NA	Water	8260C LL	
MB 410-66620/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-66620/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-66620/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-66620/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-66620/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Analysis Batch: 67216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-2	BOP-73i-1120	Total/NA	Water	8260C LL	
MB 410-67216/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-67216/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-67216/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-67216/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-67216/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

GC VOA

Prep Batch: 63297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-1	BOP-72i-1120	Total/NA	Water	RSK-175	
410-19766-2	BOP-73i-1120	Total/NA	Water	RSK-175	
410-19766-3	BOP-74i-1120	Total/NA	Water	RSK-175	
410-19766-4	BOP-75i-1120	Total/NA	Water	RSK-175	
410-19766-5	BOP-76i-1120	Total/NA	Water	RSK-175	
410-19766-6	BOP-77i-1120	Total/NA	Water	RSK-175	
410-19766-7	BOP-88i-1120	Total/NA	Water	RSK-175	
MB 410-63297/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-63297/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

GC VOA

Analysis Batch: 63298

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-1	BOP-72i-1120	Total/NA	Water	RSK-175	63297
410-19766-2	BOP-73i-1120	Total/NA	Water	RSK-175	63297
410-19766-3	BOP-74i-1120	Total/NA	Water	RSK-175	63297
410-19766-4	BOP-75i-1120	Total/NA	Water	RSK-175	63297
410-19766-5	BOP-76i-1120	Total/NA	Water	RSK-175	63297
410-19766-6	BOP-77i-1120	Total/NA	Water	RSK-175	63297
410-19766-7	BOP-88i-1120	Total/NA	Water	RSK-175	63297
MB 410-63297/1-A	Method Blank	Total/NA	Water	RSK-175	63297
LCS 410-63297/2-A	Lab Control Sample	Total/NA	Water	RSK-175	63297

Prep Batch: 64147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-1 - DL	BOP-72i-1120	Total/NA	Water	RSK-175	
410-19766-2 - DL	BOP-73i-1120	Total/NA	Water	RSK-175	
410-19766-3 - DL	BOP-74i-1120	Total/NA	Water	RSK-175	
410-19766-4 - DL	BOP-75i-1120	Total/NA	Water	RSK-175	
410-19766-5 - DL	BOP-76i-1120	Total/NA	Water	RSK-175	
410-19766-6 - DL	BOP-77i-1120	Total/NA	Water	RSK-175	
410-19766-7 - RA	BOP-88i-1120	Total/NA	Water	RSK-175	
410-19766-7 - DL	BOP-88i-1120	Total/NA	Water	RSK-175	
MB 410-64147/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-64147/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 64175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-1 - DL	BOP-72i-1120	Total/NA	Water	RSK-175	64147
410-19766-2 - DL	BOP-73i-1120	Total/NA	Water	RSK-175	64147
410-19766-3 - DL	BOP-74i-1120	Total/NA	Water	RSK-175	64147
410-19766-4 - DL	BOP-75i-1120	Total/NA	Water	RSK-175	64147
410-19766-5 - DL	BOP-76i-1120	Total/NA	Water	RSK-175	64147
410-19766-6 - DL	BOP-77i-1120	Total/NA	Water	RSK-175	64147
410-19766-7 - DL	BOP-88i-1120	Total/NA	Water	RSK-175	64147
410-19766-7 - RA	BOP-88i-1120	Total/NA	Water	RSK-175	64147
MB 410-64147/1-A	Method Blank	Total/NA	Water	RSK-175	64147
LCS 410-64147/2-A	Lab Control Sample	Total/NA	Water	RSK-175	64147

HPLC/IC

Analysis Batch: 63706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-1	BOP-72i-1120	Total/NA	Water	EPA 300.0 R2.1	
410-19766-3	BOP-74i-1120	Total/NA	Water	EPA 300.0 R2.1	
410-19766-4	BOP-75i-1120	Total/NA	Water	EPA 300.0 R2.1	
410-19766-7	BOP-88i-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-63706/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-63706/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-19766-4 MS	BOP-75i-1120	Total/NA	Water	EPA 300.0 R2.1	
410-19766-4 DU	BOP-75i-1120	Total/NA	Water	EPA 300.0 R2.1	

HPLC/IC

Analysis Batch: 63707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-3	BOP-74i-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-63707/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-63707/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 63722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-5	BOP-76i-1120	Total/NA	Water	EPA 300.0 R2.1	
410-19766-6	BOP-77i-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-63722/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-63722/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 63723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-2	BOP-73i-1120	Total/NA	Water	EPA 300.0 R2.1	
410-19766-5	BOP-76i-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-63723/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-63723/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 67404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-67404/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-67404/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 67517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-2	BOP-73i-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-67517/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-67517/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 67696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-6	BOP-77i-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-67696/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-67696/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 67853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-67853/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-67853/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 67854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-2	BOP-73i-1120	Total/NA	Water	EPA 300.0 R2.1	
410-19766-5	BOP-76i-1120	Total/NA	Water	EPA 300.0 R2.1	
410-19766-6	BOP-77i-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-67854/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-67854/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 70016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-4	BOP-75i-1120	Total/NA	Water	EPA 300.0 R2.1	

HPLC/IC (Continued)

Analysis Batch: 70016 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-7	BOP-88i-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-70016/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-70016/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 70074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-1	BOP-72i-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-70074/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-70074/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 71059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-71059/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-71059/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 63378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-2	BOP-73i-1120	Dissolved	Water	Non-Digest Prep	
MB 410-63378/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-63378/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Prep Batch: 63488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-2	BOP-73i-1120	Total Recoverable	Water	3005A	
MB 410-63488/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-63488/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 64034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-1	BOP-72i-1120	Total Recoverable	Water	3005A	
410-19766-3	BOP-74i-1120	Total Recoverable	Water	3005A	
410-19766-4	BOP-75i-1120	Total Recoverable	Water	3005A	
410-19766-5	BOP-76i-1120	Total Recoverable	Water	3005A	
410-19766-6	BOP-77i-1120	Total Recoverable	Water	3005A	
MB 410-64034/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-64034/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 64062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-1	BOP-72i-1120	Dissolved	Water	Non-Digest Prep	
410-19766-3	BOP-74i-1120	Dissolved	Water	Non-Digest Prep	
410-19766-4	BOP-75i-1120	Dissolved	Water	Non-Digest Prep	
410-19766-5	BOP-76i-1120	Dissolved	Water	Non-Digest Prep	
410-19766-6	BOP-77i-1120	Dissolved	Water	Non-Digest Prep	
MB 410-64062/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-64062/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	
410-19766-4 MS	BOP-75i-1120	Dissolved	Water	Non-Digest Prep	
410-19766-4 MSD	BOP-75i-1120	Dissolved	Water	Non-Digest Prep	
410-19766-4 DU	BOP-75i-1120	Dissolved	Water	Non-Digest Prep	

Metals

Prep Batch: 65487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-7	BOP-88i-1120	Total Recoverable	Water	3005A	
MB 410-65487/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-65487/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 66188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-1	BOP-72i-1120	Dissolved	Water	6010D	64062
410-19766-3	BOP-74i-1120	Dissolved	Water	6010D	64062
410-19766-4	BOP-75i-1120	Dissolved	Water	6010D	64062
410-19766-5	BOP-76i-1120	Dissolved	Water	6010D	64062
410-19766-6	BOP-77i-1120	Dissolved	Water	6010D	64062
MB 410-64062/1-A	Method Blank	Total/NA	Water	6010D	64062
LCS 410-64062/2-A	Lab Control Sample	Total/NA	Water	6010D	64062
410-19766-4 MS	BOP-75i-1120	Dissolved	Water	6010D	64062
410-19766-4 MSD	BOP-75i-1120	Dissolved	Water	6010D	64062
410-19766-4 DU	BOP-75i-1120	Dissolved	Water	6010D	64062

Analysis Batch: 66407

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-1	BOP-72i-1120	Total Recoverable	Water	6010D	64034
410-19766-3	BOP-74i-1120	Total Recoverable	Water	6010D	64034
410-19766-4	BOP-75i-1120	Total Recoverable	Water	6010D	64034
410-19766-5	BOP-76i-1120	Total Recoverable	Water	6010D	64034
410-19766-6	BOP-77i-1120	Total Recoverable	Water	6010D	64034
MB 410-64034/1-A	Method Blank	Total Recoverable	Water	6010D	64034
LCS 410-64034/2-A	Lab Control Sample	Total Recoverable	Water	6010D	64034

Analysis Batch: 66468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-2	BOP-73i-1120	Dissolved	Water	6010D	63378
MB 410-63378/1-A	Method Blank	Total/NA	Water	6010D	63378
LCS 410-63378/2-A	Lab Control Sample	Total/NA	Water	6010D	63378

Analysis Batch: 66469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-2	BOP-73i-1120	Total Recoverable	Water	6010D	63488
MB 410-63488/1-A	Method Blank	Total Recoverable	Water	6010D	63488
LCS 410-63488/2-A	Lab Control Sample	Total Recoverable	Water	6010D	63488

Analysis Batch: 67047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-7	BOP-88i-1120	Total Recoverable	Water	6010D	65487
MB 410-65487/1-A	Method Blank	Total Recoverable	Water	6010D	65487
LCS 410-65487/2-A	Lab Control Sample	Total Recoverable	Water	6010D	65487

Prep Batch: 68250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-7	BOP-88i-1120	Dissolved	Water	Non-Digest Prep	
MB 410-68250/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-68250/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

QC Association Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19766-1

Metals

Analysis Batch: 68692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-7	BOP-88i-1120	Dissolved	Water	6010D	68250
MB 410-68250/1-A	Method Blank	Total/NA	Water	6010D	68250
LCS 410-68250/2-A	Lab Control Sample	Total/NA	Water	6010D	68250

General Chemistry

Analysis Batch: 70929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-1	BOP-72i-1120	Total/NA	Water	5310C-2011	
410-19766-2	BOP-73i-1120	Total/NA	Water	5310C-2011	
410-19766-3	BOP-74i-1120	Total/NA	Water	5310C-2011	
410-19766-4	BOP-75i-1120	Total/NA	Water	5310C-2011	
410-19766-5	BOP-76i-1120	Total/NA	Water	5310C-2011	
MB 410-70929/35	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-70929/34	Lab Control Sample	Total/NA	Water	5310C-2011	

Analysis Batch: 71707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-71707/25	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-71707/24	Lab Control Sample	Total/NA	Water	5310C-2011	

Analysis Batch: 72142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19766-6	BOP-77i-1120	Total/NA	Water	5310C-2011	
410-19766-7	BOP-88i-1120	Total/NA	Water	5310C-2011	
MB 410-72142/4	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-72142/3	Lab Control Sample	Total/NA	Water	5310C-2011	
410-19766-6 MS	BOP-77i-1120	Total/NA	Water	5310C-2011	
410-19766-6 DU	BOP-77i-1120	Total/NA	Water	5310C-2011	

Client Sample ID: BOP-72i-1120

Lab Sample ID: 410-19766-1

Date Collected: 11/05/20 10:08

Matrix: Water

Date Received: 11/06/20 10:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	66213	11/15/20 22:40	UCB5	ELLE
Total/NA	Prep	RSK-175			63297	11/07/20 13:52	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	63298	11/07/20 21:41	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		64147	11/10/20 08:59	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	100	64175	11/10/20 14:40	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	70074	11/25/20 00:01	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	63706	11/07/20 13:58	W5UX	ELLE
Dissolved	Prep	Non-Digest Prep			64062	11/10/20 06:40	UJL8	ELLE
Dissolved	Analysis	6010D		1	66188	11/15/20 14:50	SB	ELLE
Total Recoverable	Prep	3005A			64034	11/10/20 03:21	UJL8	ELLE
Total Recoverable	Analysis	6010D		1	66407	11/16/20 08:11	ULJC	ELLE
Total/NA	Analysis	5310C-2011		5	70929	11/26/20 13:24	NKL9	ELLE

Client Sample ID: BOP-73i-1120

Lab Sample ID: 410-19766-2

Date Collected: 11/05/20 11:58

Matrix: Water

Date Received: 11/06/20 10:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL	DL	20	66213	11/16/20 03:41	UCB5	ELLE
Total/NA	Analysis	8260C LL		1	67216	11/18/20 08:36	UCB5	ELLE
Total/NA	Prep	RSK-175			63297	11/07/20 13:52	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	63298	11/07/20 22:17	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		64147	11/10/20 08:59	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	100	64175	11/10/20 14:58	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	67517	11/19/20 00:14	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	67854	11/19/20 12:11	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	63723	11/07/20 14:58	W5UX	ELLE
Dissolved	Prep	Non-Digest Prep			63378	11/08/20 09:35	UJL8	ELLE
Dissolved	Analysis	6010D		1	66468	11/16/20 10:44	SB	ELLE
Total Recoverable	Prep	3005A			63488	11/09/20 02:52	UJL8	ELLE
Total Recoverable	Analysis	6010D		1	66469	11/16/20 11:17	ULJC	ELLE
Total/NA	Analysis	5310C-2011		25	70929	11/26/20 13:40	NKL9	ELLE

Client Sample ID: BOP-74i-1120

Lab Sample ID: 410-19766-3

Date Collected: 11/05/20 13:42

Matrix: Water

Date Received: 11/06/20 10:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL	DL	20	66620	11/16/20 23:34	K4WN	ELLE
Total/NA	Analysis	8260C LL		1	66213	11/15/20 23:02	UCB5	ELLE
Total/NA	Prep	RSK-175			63297	11/07/20 13:52	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	63298	11/07/20 22:35	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		64147	11/10/20 08:59	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	100	64175	11/10/20 15:17	LXF2	ELLE

Client Sample ID: BOP-74i-1120

Lab Sample ID: 410-19766-3

Date Collected: 11/05/20 13:42

Matrix: Water

Date Received: 11/06/20 10:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		5	63706	11/07/20 16:31	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	63707	11/07/20 16:31	W5UX	ELLE
Dissolved	Prep	Non-Digest Prep			64062	11/10/20 06:40	UJL8	ELLE
Dissolved	Analysis	6010D		5	66188	11/15/20 15:11	SB	ELLE
Total Recoverable	Prep	3005A			64034	11/10/20 03:21	UJL8	ELLE
Total Recoverable	Analysis	6010D		1	66407	11/16/20 08:01	ULJC	ELLE
Total/NA	Analysis	5310C-2011		100	70929	11/26/20 13:55	NKL9	ELLE

Client Sample ID: BOP-75i-1120

Lab Sample ID: 410-19766-4

Date Collected: 11/05/20 09:18

Matrix: Water

Date Received: 11/06/20 10:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL	DL	20	66620	11/16/20 23:56	K4WN	ELLE
Total/NA	Analysis	8260C LL		1	66213	11/16/20 05:49	UCB5	ELLE
Total/NA	Prep	RSK-175			63297	11/07/20 13:52	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	63298	11/07/20 22:53	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		64147	11/10/20 08:59	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	200	64175	11/10/20 15:36	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	70016	11/24/20 23:21	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	63706	11/07/20 12:32	W5UX	ELLE
Dissolved	Prep	Non-Digest Prep			64062	11/10/20 06:40	UJL8	ELLE
Dissolved	Analysis	6010D		1	66188	11/15/20 14:34	SB	ELLE
Total Recoverable	Prep	3005A			64034	11/10/20 03:21	UJL8	ELLE
Total Recoverable	Analysis	6010D		1	66407	11/16/20 08:14	ULJC	ELLE
Total/NA	Analysis	5310C-2011		250	70929	11/26/20 14:42	NKL9	ELLE

Client Sample ID: BOP-76i-1120

Lab Sample ID: 410-19766-5

Date Collected: 11/05/20 10:59

Matrix: Water

Date Received: 11/06/20 10:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL	DL	50	66620	11/17/20 00:18	K4WN	ELLE
Total/NA	Analysis	8260C LL		1	66213	11/15/20 23:23	UCB5	ELLE
Total/NA	Prep	RSK-175			63297	11/07/20 13:52	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	63298	11/07/20 23:11	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		64147	11/10/20 08:59	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	100	64175	11/10/20 15:54	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	67854	11/19/20 12:29	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	63722	11/07/20 14:22	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	63723	11/07/20 14:22	W5UX	ELLE
Dissolved	Prep	Non-Digest Prep			64062	11/10/20 06:40	UJL8	ELLE
Dissolved	Analysis	6010D		5	66188	11/15/20 15:08	SB	ELLE

Client Sample ID: BOP-76i-1120

Lab Sample ID: 410-19766-5

Date Collected: 11/05/20 10:59

Matrix: Water

Date Received: 11/06/20 10:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			64034	11/10/20 03:21	UJL8	ELLE
Total Recoverable	Analysis	6010D		5	66407	11/16/20 07:39	ULJC	ELLE
Total/NA	Analysis	5310C-2011		250	70929	11/26/20 14:57	NKL9	ELLE

Client Sample ID: BOP-77i-1120

Lab Sample ID: 410-19766-6

Date Collected: 11/05/20 12:40

Matrix: Water

Date Received: 11/06/20 10:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	66213	11/16/20 04:24	UCB5	ELLE
Total/NA	Analysis	8260C LL	DL	10	66213	11/16/20 04:45	UCB5	ELLE
Total/NA	Prep	RSK-175			63297	11/07/20 13:52	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	63298	11/07/20 23:30	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		64147	11/10/20 08:59	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	100	64175	11/10/20 16:13	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		20	67696	11/19/20 01:08	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		20	67854	11/19/20 13:05	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	63722	11/07/20 16:11	W5UX	ELLE
Dissolved	Prep	Non-Digest Prep			64062	11/10/20 06:40	UJL8	ELLE
Dissolved	Analysis	6010D		5	66188	11/15/20 15:14	SB	ELLE
Total Recoverable	Prep	3005A			64034	11/10/20 03:21	UJL8	ELLE
Total Recoverable	Analysis	6010D		10	66407	11/16/20 07:49	ULJC	ELLE
Total/NA	Analysis	5310C-2011		250	72142	12/02/20 00:57	NKL9	ELLE

Client Sample ID: BOP-88i-1120

Lab Sample ID: 410-19766-7

Date Collected: 11/05/20 14:59

Matrix: Water

Date Received: 11/06/20 10:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL	DL	100	66620	11/17/20 00:40	K4WN	ELLE
Total/NA	Analysis	8260C LL		2	66213	11/16/20 05:06	UCB5	ELLE
Total/NA	Prep	RSK-175			63297	11/07/20 13:52	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	63298	11/07/20 23:48	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		64147	11/10/20 08:59	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	50	64175	11/10/20 16:32	LXF2	ELLE
Total/NA	Prep	RSK-175	RA		64147	11/10/20 08:59	LXF2	ELLE
Total/NA	Analysis	RSK-175	RA	1	64175	11/10/20 17:09	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		20	70016	11/24/20 23:38	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	63706	11/07/20 16:48	W5UX	ELLE
Dissolved	Prep	Non-Digest Prep			68250	11/19/20 17:20	UJLA	ELLE
Dissolved	Analysis	6010D		1	68692	11/20/20 11:38	MDP5	ELLE
Total Recoverable	Prep	3005A			65487	11/13/20 02:36	UJL8	ELLE
Total Recoverable	Analysis	6010D		5	67047	11/17/20 12:58	SB	ELLE
Total/NA	Analysis	5310C-2011		500	72142	12/02/20 02:28	NKL9	ELLE

Lab Chronicle

Client: Landau & Associates, Inc.
Job ID: 410-19766-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: Trip Blanks
Lab Sample ID: 410-19766-8
Date Collected: 11/05/20 00:00
Matrix: Water
Date Received: 11/06/20 10:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	66213	11/15/20 21:37	UCB5	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: 410-19766-1
Project/Site: Boeing of Portland 0025116.120.412

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 0025116.120.412

Job ID: 410-19766-1

Method	Method Description	Protocol	Laboratory
8260C LL	Volatile Organic Compounds by GC/MS	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010D	Metals (ICP)	SW846	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

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.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19766-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-19766-1	BOP-72i-1120	Water	11/05/20 10:08	11/06/20 10:06	
410-19766-2	BOP-73i-1120	Water	11/05/20 11:58	11/06/20 10:06	
410-19766-3	BOP-74i-1120	Water	11/05/20 13:42	11/06/20 10:06	
410-19766-4	BOP-75i-1120	Water	11/05/20 09:18	11/06/20 10:06	
410-19766-5	BOP-76i-1120	Water	11/05/20 10:59	11/06/20 10:06	
410-19766-6	BOP-77i-1120	Water	11/05/20 12:40	11/06/20 10:06	
410-19766-7	BOP-88i-1120	Water	11/05/20 14:59	11/06/20 10:06	
410-19766-8	Trip Blanks	Water	11/05/20 00:00	11/06/20 10:06	

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # ____

410-19766 Chain of Custody

ronmental use only

correspond.

(1) Client Information

Site Location: Gresham Oregon
Site Project: Boeing of Portland
Site Program/#: 0025116.120.412
Boeing PM: Debbie Taege
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): ____
Sampler: WHL/GJN # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: VOC (38 list)	TOC	Sulfate	Nitrate	AMEE	Total Iron	Dissolved Iron	(5) Remarks/Comments
BOP-72i-1120	11/5/20	10:08	H_2O	11	X	X	X	X	X	X	X	
BOP-73i-1120		11:58		11	X	X	X	X	X	X	X	
BOP-74i-1120		13:42		11	X	X	X	X	X	X	X	
BOP-75i-1120		9:18		11	X	X	X	X	X	X	X	
BOP-76i-1120		10:59		11	X	X	X	X	X	X	X	
BOP-77i-1120		12:40		11	X	X	X	X	X	X	X	
BOP-88i-1120		14:59		11	X	X	X	X	X	X	X	
Trip Blanks	—	—		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 (7)
W. Taege	11/5/20 16:45		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time 11/6/20 1106

Relinquished by commercial carrier (circle): UPS FedEx Other: ____
Temperature upon Receipt: 13.6 °C
Custody Seals Intact?: Yes No

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: 410-19766-1

Login Number: 19766
List Number: 1
Creator: Rivera, Tatiana

List Source: Eurofins Lancaster Laboratories Env

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.	N/A	
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.	True	
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	

eurofins | Environment Testing America



ANALYTICAL REPORT

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

Laboratory Job ID: 410-19949-1
Client Project/Site: Boeing of Portland 0025116.120.412

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

Attn: Evelyn Ives

Jennifer Pursel

Authorized for release by:
12/7/2020 2:09:07 PM
Jennifer Pursel, Operations Support Specialist
(717)556-7262
Jennifer.Pursel@eurofinset.com

Designee for

Kay Hower, Principal Project Manager
(717)556-7364
Kay.Hower@eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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. 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. 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.



Jennifer Pursel
Operations Support Specialist
12/7/2020 2:09:07 PM

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Detection Summary 6
Client Sample Results 7
Surrogate Summary 10
QC Sample Results 11
QC Association Summary 21
Lab Chronicle 23
Certification Summary 24
Method Summary 25
Sample Summary 26
Chain of Custody 27
Receipt Checklists 28

Definitions/Glossary

Client: Landau & Associates, Inc. Job ID: 410-19949-1
Project/Site: Boeing of Portland 0025116.120.412

Qualifiers

GC/MS VOA

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

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate recovery exceeds control limits

HPLC/IC

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

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: 410-19949-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-19949-1

Receipt
The samples were received on 11/7/2020 10:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was -0.9º C.

GC/MS VOA
Method 8260C LL: The continuing calibration verification (CCV) associated with batch 410-66620 recovered outside acceptance criteria, low biased, for 1,1,1-Trichloroethane, 1,2-Dichloroethane and Carbon tetrachloride. 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.

Method 8260C LL: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): LAI-8-1120 (410-19949-1).

Method 8260C LL: The referenced method allows a maximum of 20% of the analytes in the continuing calibration verification (CCV) associated with batch 410-67216 to exceed the 20% Drift continuing calibration verification criteria. Non-detections of the affected analytes are reported. Any detections are considered estimated.
The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
Vinyl chloride	-29
Chloroethane	-24
Chloromethane	-27
Vinyl acetate	23
Bromomethane	-32

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

HPLC/IC
Methods 300.0, 9056A: The following sample was analyzed outside of analytical holding time for Nitrogen, Nitrate due to laboratory error: LAI-8-1120 (410-19949-1).

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

GC Semi VOA
Method NWTPH-Dx: The surrogate recovery for the method blank associated with preparation batch 410-64131 and 410-65527 and analytical batch 410-65835 was outside the lower control limits. There was no sample volume remaining for a second trial; therefore, data has been reported.

Method NWTPH-Dx: The following samples contained a sample pattern which was within the motor oil range retention time window: LAI-8-1120 (410-19949-1) and (410-19949-B-1-C DU).

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

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

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

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

Detection Summary

Client: Landau & Associates, Inc.
Job ID: 410-19949-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: LAI-8-1120
Lab Sample ID: 410-19949-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	6.05		5.00		ug/L	1		8260C LL	Total/NA
2-Hexanone	16.3		5.00		ug/L	1		8260C LL	Total/NA
4-Methyl-2-pentanone	12.6		5.00		ug/L	1		8260C LL	Total/NA
Acetone	25.4		5.00		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	24.2		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	0.218		0.200		ug/L	1		8260C LL	Total/NA
trans-1,2-Dichloroethene	0.243		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	1.70		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.659		0.200		ug/L	1		8260C LL	Total/NA
C12-C24	133		2.95		mg/L	50		NWTPH-Dx	Total/NA
Diesel	170		2.95		mg/L	50		NWTPH-Dx	Total/NA
C16-C36	246		7.37		mg/L	50		NWTPH-Dx	Total/NA
Total Organic Carbon	76.8		5.00		mg/L	5		5310C-2011	Total/NA

Client Sample ID: Trip blanks
Lab Sample ID: 410-19949-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: LAI-8-1120

Date Collected: 11/06/20 13:45
Date Received: 11/07/20 10:00

Lab Sample ID: 410-19949-1

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			11/18/20 04:20	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/18/20 04:20	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/18/20 04:20	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/18/20 04:20	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/18/20 04:20	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/18/20 04:20	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/18/20 04:20	1
2-Butanone	**6.05**		5.00		ug/L			11/18/20 04:20	1
2-Hexanone	**16.3**		5.00		ug/L			11/18/20 04:20	1
4-Methyl-2-pentanone	**12.6**		5.00		ug/L			11/18/20 04:20	1
Acetone	**25.4**		5.00		ug/L			11/18/20 04:20	1
Benzene	0.200	U	0.200		ug/L			11/18/20 04:20	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/18/20 04:20	1
Bromoform	1.00	U	1.00		ug/L			11/18/20 04:20	1
Bromomethane	0.500	U	0.500		ug/L			11/18/20 04:20	1
Carbon disulfide	0.500	U	0.500		ug/L			11/18/20 04:20	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/18/20 04:20	1
Chlorobenzene	0.500	U	0.500		ug/L			11/18/20 04:20	1
Chloroethane	0.500	U	0.500		ug/L			11/18/20 04:20	1
Chloroform	0.200	U	0.200		ug/L			11/18/20 04:20	1
Chloromethane	0.500	U	0.500		ug/L			11/18/20 04:20	1
cis-1,2-Dichloroethene	**24.2**		0.200		ug/L			11/18/20 04:20	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/18/20 04:20	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/18/20 04:20	1
Ethylbenzene	0.500	U	0.500		ug/L			11/18/20 04:20	1
Freon 113	0.500	U	0.500		ug/L			11/18/20 04:20	1
m&p-Xylene	0.500	U	0.500		ug/L			11/18/20 04:20	1
Methylene Chloride	0.500	U	0.500		ug/L			11/18/20 04:20	1
o-Xylene	0.500	U	0.500		ug/L			11/18/20 04:20	1
Styrene	0.500	U	0.500		ug/L			11/18/20 04:20	1
Tetrachloroethene	**0.218**		0.200		ug/L			11/18/20 04:20	1
Toluene	0.200	U	0.200		ug/L			11/18/20 04:20	1
trans-1,2-Dichloroethene	**0.243**		0.200		ug/L			11/18/20 04:20	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/18/20 04:20	1
Trichloroethene	**1.70**		0.200		ug/L			11/18/20 04:20	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/18/20 04:20	1
Vinyl acetate	0.500	U	0.500		ug/L			11/18/20 04:20	1
Vinyl chloride	**0.659**		0.200		ug/L			11/18/20 04:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*11/18/20 04:20*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*11/18/20 04:20*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/18/20 04:20*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/18/20 04:20*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	**133**		2.95		mg/L		11/10/20 08:44	11/16/20 23:35	50
Diesel	**170**		2.95		mg/L		11/10/20 08:44	11/16/20 23:35	50
C16-C36	**246**		7.37		mg/L		11/10/20 08:44	11/16/20 23:35	50

Client Sample ID: LAI-8-1120

Date Collected: 11/06/20 13:45
Date Received: 11/07/20 10:00

Lab Sample ID: 410-19949-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*1058*	*X*	*50 - 150*	*11/10/20 08:44*	*11/16/20 23:35*	*50*
Chlorobenzene (Surr)	*118*		*50 - 150*	*11/10/20 08:44*	*11/16/20 23:35*	*50*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U H	0.100		mg/L			11/11/20 14:27	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/11/20 14:27	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**76.8**		5.00		mg/L			11/26/20 07:52	5

Client Sample ID: Trip blanks

Date Collected: 11/06/20 00:00
Date Received: 11/07/20 10:00

Lab Sample ID: 410-19949-2

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			11/16/20 22:50	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/16/20 22:50	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/16/20 22:50	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/16/20 22:50	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 22:50	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/16/20 22:50	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/16/20 22:50	1
2-Butanone	5.00	U	5.00		ug/L			11/16/20 22:50	1
2-Hexanone	5.00	U	5.00		ug/L			11/16/20 22:50	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/16/20 22:50	1
Acetone	5.00	U	5.00		ug/L			11/16/20 22:50	1
Benzene	0.200	U	0.200		ug/L			11/16/20 22:50	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/16/20 22:50	1
Bromoform	1.00	U	1.00		ug/L			11/16/20 22:50	1
Bromomethane	0.500	U	0.500		ug/L			11/16/20 22:50	1
Carbon disulfide	0.500	U	0.500		ug/L			11/16/20 22:50	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/16/20 22:50	1
Chlorobenzene	0.500	U	0.500		ug/L			11/16/20 22:50	1
Chloroethane	0.500	U	0.500		ug/L			11/16/20 22:50	1
Chloroform	0.200	U	0.200		ug/L			11/16/20 22:50	1
Chloromethane	0.500	U	0.500		ug/L			11/16/20 22:50	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 22:50	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/16/20 22:50	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/16/20 22:50	1
Ethylbenzene	0.500	U	0.500		ug/L			11/16/20 22:50	1
Freon 113	0.500	U	0.500		ug/L			11/16/20 22:50	1
m&p-Xylene	0.500	U	0.500		ug/L			11/16/20 22:50	1
Methylene Chloride	0.500	U	0.500		ug/L			11/16/20 22:50	1
o-Xylene	0.500	U	0.500		ug/L			11/16/20 22:50	1
Styrene	0.500	U	0.500		ug/L			11/16/20 22:50	1

Client: Landau & Associates, Inc.
Job ID: 410-19949-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: Trip blanks
Lab Sample ID: 410-19949-2
Date Collected: 11/06/20 00:00
Matrix: Water
Date Received: 11/07/20 10:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	0.200	U	0.200		ug/L			11/16/20 22:50	1
Toluene	0.200	U	0.200		ug/L			11/16/20 22:50	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 22:50	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/16/20 22:50	1
Trichloroethene	0.200	U	0.200		ug/L			11/16/20 22:50	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/16/20 22:50	1
Vinyl acetate	0.500	U	0.500		ug/L			11/16/20 22:50	1
Vinyl chloride	0.200	U	0.200		ug/L			11/16/20 22:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*11/16/20 22:50*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/16/20 22:50*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/16/20 22:50*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*11/16/20 22:50*	*1*

Surrogate Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19949-1

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)
410-19949-1	LAI-8-1120	101	96	98	99
410-19949-2	Trip blanks	100	93	97	103
LCS 410-66620/5	Lab Control Sample	96	91	97	103
LCS 410-66620/7	Lab Control Sample	97	92	98	103
LCS 410-67216/5	Lab Control Sample	101	94	97	100
LCS 410-67216/7	Lab Control Sample	103	95	98	99
LCSD 410-66620/6	Lab Control Sample Dup	95	92	98	102
LCSD 410-66620/8	Lab Control Sample Dup	97	94	98	104
LCSD 410-67216/6	Lab Control Sample Dup	101	95	97	100
LCSD 410-67216/8	Lab Control Sample Dup	101	96	97	99
MB 410-66620/10	Method Blank	100	93	95	102
MB 410-67216/10	Method Blank	104	97	94	101

Surrogate Legend

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

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		OTP	CBNZ
Lab Sample ID	Client Sample ID	(50-150)	(50-150)
410-19949-1	LAI-8-1120	1058 X	118
410-19949-1 DU	LAI-8-1120	1000 X	168 X
LCS 410-64131/2-B	Lab Control Sample	81	51
LCSD 410-64131/3-B	Lab Control Sample Dup	101	62
MB 410-64131/1-B	Method Blank	15 X	12 X

Surrogate Legend

OTP = o- terphenyl (Surr)
CBNZ = Chlorobenzene (Surr)

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19949-1

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

Lab Sample ID: MB 410-66620/10
Matrix: Water
Analysis Batch: 66620

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			11/16/20 21:43	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/16/20 21:43	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/16/20 21:43	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 21:43	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/16/20 21:43	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/16/20 21:43	1
2-Butanone	5.00	U	5.00		ug/L			11/16/20 21:43	1
2-Hexanone	5.00	U	5.00		ug/L			11/16/20 21:43	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/16/20 21:43	1
Acetone	5.00	U	5.00		ug/L			11/16/20 21:43	1
Benzene	0.200	U	0.200		ug/L			11/16/20 21:43	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
Bromoform	1.00	U	1.00		ug/L			11/16/20 21:43	1
Bromomethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
Carbon disulfide	0.500	U	0.500		ug/L			11/16/20 21:43	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/16/20 21:43	1
Chlorobenzene	0.500	U	0.500		ug/L			11/16/20 21:43	1
Chloroethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
Chloroform	0.200	U	0.200		ug/L			11/16/20 21:43	1
Chloromethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 21:43	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/16/20 21:43	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
Ethylbenzene	0.500	U	0.500		ug/L			11/16/20 21:43	1
Freon 113	0.500	U	0.500		ug/L			11/16/20 21:43	1
m&p-Xylene	0.500	U	0.500		ug/L			11/16/20 21:43	1
Methylene Chloride	0.500	U	0.500		ug/L			11/16/20 21:43	1
o-Xylene	0.500	U	0.500		ug/L			11/16/20 21:43	1
Styrene	0.500	U	0.500		ug/L			11/16/20 21:43	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/16/20 21:43	1
Toluene	0.200	U	0.200		ug/L			11/16/20 21:43	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 21:43	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/16/20 21:43	1
Trichloroethene	0.200	U	0.200		ug/L			11/16/20 21:43	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
Vinyl acetate	0.500	U	0.500		ug/L			11/16/20 21:43	1
Vinyl chloride	0.200	U	0.200		ug/L			11/16/20 21:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*11/16/20 21:43*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/16/20 21:43*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*11/16/20 21:43*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/16/20 21:43*	*1*

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

Lab Sample ID: LCS 410-66620/5
Matrix: Water
Analysis Batch: 66620

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	4.196		ug/L		84	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.252		ug/L		105	75 - 123
1,1,2-Trichloroethane	5.00	4.892		ug/L		98	80 - 120
1,1-Dichloroethane	5.00	4.764		ug/L		95	74 - 120
1,1-Dichloroethene	5.00	4.988		ug/L		100	80 - 131
1,2-Dichloroethane	5.00	4.223		ug/L		84	69 - 122
1,2-Dichloropropane	5.00	5.077		ug/L		102	80 - 120
2-Butanone	37.5	34.85		ug/L		93	59 - 141
2-Hexanone	25.0	24.64		ug/L		99	52 - 140
4-Methyl-2-pentanone	25.0	24.53		ug/L		98	55 - 140
Acetone	37.5	30.04		ug/L		80	60 - 146
Benzene	5.00	4.897		ug/L		98	80 - 120
Bromodichloromethane	5.00	4.605		ug/L		92	73 - 124
Bromoform	5.00	4.314		ug/L		86	49 - 144
Bromomethane	5.00	4.212		ug/L		84	60 - 136
Carbon disulfide	5.00	5.002		ug/L		100	67 - 130
Carbon tetrachloride	5.00	4.120		ug/L		82	64 - 141
Chlorobenzene	5.00	4.787		ug/L		96	80 - 120
Chloroethane	5.00	4.645		ug/L		93	63 - 120
Chloroform	5.00	4.559		ug/L		91	80 - 120
Chloromethane	5.00	4.101		ug/L		82	56 - 124
cis-1,2-Dichloroethene	5.00	5.078		ug/L		102	80 - 122
cis-1,3-Dichloropropene	5.00	4.738		ug/L		95	67 - 121
Dibromochloromethane	5.00	4.668		ug/L		93	64 - 138
Ethylbenzene	5.00	4.707		ug/L		94	80 - 120
Freon 113	5.00	4.665		ug/L		93	75 - 133
m&p-Xylene	10.0	9.792		ug/L		98	80 - 120
Methylene Chloride	5.00	5.055		ug/L		101	80 - 120
o-Xylene	5.00	4.852		ug/L		97	80 - 120
Styrene	5.00	4.925		ug/L		98	80 - 120
Tetrachloroethene	5.00	4.668		ug/L		93	80 - 120
Toluene	5.00	4.974		ug/L		99	80 - 120
trans-1,2-Dichloroethene	5.00	4.912		ug/L		98	80 - 122
trans-1,3-Dichloropropene	5.00	4.657		ug/L		93	61 - 129
Trichloroethene	5.00	4.581		ug/L		92	80 - 120
Trichlorofluoromethane	5.00	4.209		ug/L		84	62 - 136
Vinyl chloride	5.00	4.504		ug/L		90	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*
Dibromofluoromethane (Surr)	*91*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

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

Lab Sample ID: LCS 410-66620/7
Matrix: Water
Analysis Batch: 66620

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	11.29		ug/L		90	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 410-66620/6
Matrix: Water
Analysis Batch: 66620

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	4.206		ug/L		84	78 - 126	0	30
1,1,2,2-Tetrachloroethane			5.00	5.155		ug/L		103	75 - 123	2	30
1,1,2-Trichloroethane			5.00	4.910		ug/L		98	80 - 120	0	30
1,1-Dichloroethane			5.00	4.755		ug/L		95	74 - 120	0	30
1,1-Dichloroethene			5.00	4.995		ug/L		100	80 - 131	0	30
1,2-Dichloroethane			5.00	4.127		ug/L		83	69 - 122	2	30
1,2-Dichloropropane			5.00	5.055		ug/L		101	80 - 120	0	30
2-Butanone			37.5	37.58		ug/L		100	59 - 141	8	30
2-Hexanone			25.0	26.83		ug/L		107	52 - 140	9	30
4-Methyl-2-pentanone			25.0	25.79		ug/L		103	55 - 140	5	30
Acetone			37.5	31.34		ug/L		84	60 - 146	4	30
Benzene			5.00	4.863		ug/L		97	80 - 120	1	30
Bromodichloromethane			5.00	4.541		ug/L		91	73 - 124	1	30
Bromoform			5.00	4.138		ug/L		83	49 - 144	4	30
Bromomethane			5.00	4.203		ug/L		84	60 - 136	0	30
Carbon disulfide			5.00	5.012		ug/L		100	67 - 130	0	30
Carbon tetrachloride			5.00	4.037		ug/L		81	64 - 141	2	30
Chlorobenzene			5.00	4.742		ug/L		95	80 - 120	1	30
Chloroethane			5.00	4.544		ug/L		91	63 - 120	2	30
Chloroform			5.00	4.520		ug/L		90	80 - 120	1	30
Chloromethane			5.00	4.101		ug/L		82	56 - 124	0	30
cis-1,2-Dichloroethene			5.00	4.982		ug/L		100	80 - 122	2	30
cis-1,3-Dichloropropene			5.00	4.686		ug/L		94	67 - 121	1	30
Dibromochloromethane			5.00	4.674		ug/L		93	64 - 138	0	30
Ethylbenzene			5.00	4.753		ug/L		95	80 - 120	1	30
Freon 113			5.00	4.588		ug/L		92	75 - 133	2	30
m&p-Xylene			10.0	9.864		ug/L		99	80 - 120	1	30
Methylene Chloride			5.00	4.953		ug/L		99	80 - 120	2	30
o-Xylene			5.00	4.879		ug/L		98	80 - 120	1	30
Styrene			5.00	5.024		ug/L		100	80 - 120	2	30
Tetrachloroethene			5.00	4.622		ug/L		92	80 - 120	1	30
Toluene			5.00	5.039		ug/L		101	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	4.943		ug/L		99	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	4.661		ug/L		93	61 - 129	0	30
Trichloroethene			5.00	4.680		ug/L		94	80 - 120	2	30

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

Lab Sample ID: LCSD 410-66620/6
Matrix: Water
Analysis Batch: 66620

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	4.191		ug/L		84	62 - 136	0	30
Vinyl chloride			5.00	4.452		ug/L		89	60 - 125	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-66620/8
Matrix: Water
Analysis Batch: 66620

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	11.31		ug/L		90	38 - 145	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: MB 410-67216/10
Matrix: Water
Analysis Batch: 67216

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			11/18/20 00:26	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/18/20 00:26	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/18/20 00:26	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/18/20 00:26	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/18/20 00:26	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/18/20 00:26	1
2-Butanone	5.00	U	5.00		ug/L			11/18/20 00:26	1
2-Hexanone	5.00	U	5.00		ug/L			11/18/20 00:26	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/18/20 00:26	1
Acetone	5.00	U	5.00		ug/L			11/18/20 00:26	1
Benzene	0.200	U	0.200		ug/L			11/18/20 00:26	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
Bromoform	1.00	U	1.00		ug/L			11/18/20 00:26	1
Bromomethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
Carbon disulfide	0.500	U	0.500		ug/L			11/18/20 00:26	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/18/20 00:26	1
Chlorobenzene	0.500	U	0.500		ug/L			11/18/20 00:26	1
Chloroethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
Chloroform	0.200	U	0.200		ug/L			11/18/20 00:26	1
Chloromethane	0.500	U	0.500		ug/L			11/18/20 00:26	1

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

Lab Sample ID: MB 410-67216/10
Matrix: Water
Analysis Batch: 67216

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			11/18/20 00:26	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/18/20 00:26	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
Ethylbenzene	0.500	U	0.500		ug/L			11/18/20 00:26	1
Freon 113	0.500	U	0.500		ug/L			11/18/20 00:26	1
m&p-Xylene	0.500	U	0.500		ug/L			11/18/20 00:26	1
Methylene Chloride	0.500	U	0.500		ug/L			11/18/20 00:26	1
o-Xylene	0.500	U	0.500		ug/L			11/18/20 00:26	1
Styrene	0.500	U	0.500		ug/L			11/18/20 00:26	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/18/20 00:26	1
Toluene	0.200	U	0.200		ug/L			11/18/20 00:26	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/18/20 00:26	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/18/20 00:26	1
Trichloroethene	0.200	U	0.200		ug/L			11/18/20 00:26	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
Vinyl acetate	0.500	U	0.500		ug/L			11/18/20 00:26	1
Vinyl chloride	0.200	U	0.200		ug/L			11/18/20 00:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*11/18/20 00:26*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*11/18/20 00:26*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*11/18/20 00:26*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/18/20 00:26*	*1*

Lab Sample ID: LCS 410-67216/5
Matrix: Water
Analysis Batch: 67216

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	4.443		ug/L		89	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.489		ug/L		110	75 - 123
1,1,2-Trichloroethane	5.00	5.607		ug/L		112	80 - 120
1,1-Dichloroethane	5.00	5.306		ug/L		106	74 - 120
1,1-Dichloroethene	5.00	5.051		ug/L		101	80 - 131
1,2-Dichloroethane	5.00	4.871		ug/L		97	69 - 122
1,2-Dichloropropane	5.00	5.483		ug/L		110	80 - 120
2-Butanone	37.5	41.52		ug/L		111	59 - 141
2-Hexanone	25.0	25.98		ug/L		104	52 - 140
4-Methyl-2-pentanone	25.0	25.49		ug/L		102	55 - 140
Acetone	37.5	36.89		ug/L		98	60 - 146
Benzene	5.00	5.147		ug/L		103	80 - 120
Bromodichloromethane	5.00	4.959		ug/L		99	73 - 124
Bromoform	5.00	4.737		ug/L		95	49 - 144
Bromomethane	5.00	3.348		ug/L		67	60 - 136
Carbon disulfide	5.00	5.272		ug/L		105	67 - 130
Carbon tetrachloride	5.00	4.433		ug/L		89	64 - 141
Chlorobenzene	5.00	5.024		ug/L		100	80 - 120
Chloroethane	5.00	3.559		ug/L		71	63 - 120

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

Lab Sample ID: LCS 410-67216/5
Matrix: Water
Analysis Batch: 67216

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	4.919		ug/L		98	80 - 120
Chloromethane	5.00	3.538		ug/L		71	56 - 124
cis-1,2-Dichloroethene	5.00	5.162		ug/L		103	80 - 122
cis-1,3-Dichloropropene	5.00	4.842		ug/L		97	67 - 121
Dibromochloromethane	5.00	5.108		ug/L		102	64 - 138
Ethylbenzene	5.00	5.077		ug/L		102	80 - 120
Freon 113	5.00	4.967		ug/L		99	75 - 133
m&p-Xylene	10.0	9.771		ug/L		98	80 - 120
Methylene Chloride	5.00	5.300		ug/L		106	80 - 120
o-Xylene	5.00	4.749		ug/L		95	80 - 120
Styrene	5.00	4.970		ug/L		99	80 - 120
Tetrachloroethene	5.00	5.008		ug/L		100	80 - 120
Toluene	5.00	4.984		ug/L		100	80 - 120
trans-1,2-Dichloroethene	5.00	4.924		ug/L		98	80 - 122
trans-1,3-Dichloropropene	5.00	5.021		ug/L		100	61 - 129
Trichloroethene	5.00	4.795		ug/L		96	80 - 120
Trichlorofluoromethane	5.00	3.891		ug/L		78	62 - 136
Vinyl chloride	5.00	3.580		ug/L		72	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 410-67216/7
Matrix: Water
Analysis Batch: 67216

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	14.65		ug/L		117	38 - 145

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 410-67216/6
Matrix: Water
Analysis Batch: 67216

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	4.434		ug/L		89	78 - 126	0	30
1,1,2,2-Tetrachloroethane	5.00	5.508		ug/L		110	75 - 123	0	30
1,1,2-Trichloroethane	5.00	5.541		ug/L		111	80 - 120	1	30
1,1-Dichloroethane	5.00	5.254		ug/L		105	74 - 120	1	30
1,1-Dichloroethene	5.00	5.050		ug/L		101	80 - 131	0	30

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

Lab Sample ID: LCSD 410-67216/6
Matrix: Water
Analysis Batch: 67216

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	4.765		ug/L		95	69 - 122	2	30
1,2-Dichloropropane			5.00	5.475		ug/L		109	80 - 120	0	30
2-Butanone			37.5	40.55		ug/L		108	59 - 141	2	30
2-Hexanone			25.0	25.90		ug/L		104	52 - 140	0	30
4-Methyl-2-pentanone			25.0	25.41		ug/L		102	55 - 140	0	30
Acetone			37.5	37.42		ug/L		100	60 - 146	1	30
Benzene			5.00	5.096		ug/L		102	80 - 120	1	30
Bromodichloromethane			5.00	4.990		ug/L		100	73 - 124	1	30
Bromoform			5.00	4.662		ug/L		93	49 - 144	2	30
Bromomethane			5.00	3.293		ug/L		66	60 - 136	2	30
Carbon disulfide			5.00	5.249		ug/L		105	67 - 130	0	30
Carbon tetrachloride			5.00	4.414		ug/L		88	64 - 141	0	30
Chlorobenzene			5.00	4.995		ug/L		100	80 - 120	1	30
Chloroethane			5.00	3.496		ug/L		70	63 - 120	2	30
Chloroform			5.00	4.900		ug/L		98	80 - 120	0	30
Chloromethane			5.00	3.617		ug/L		72	56 - 124	2	30
cis-1,2-Dichloroethene			5.00	5.115		ug/L		102	80 - 122	1	30
cis-1,3-Dichloropropene			5.00	4.813		ug/L		96	67 - 121	1	30
Dibromochloromethane			5.00	5.133		ug/L		103	64 - 138	0	30
Ethylbenzene			5.00	5.020		ug/L		100	80 - 120	1	30
Freon 113			5.00	4.854		ug/L		97	75 - 133	2	30
m&p-Xylene			10.0	9.826		ug/L		98	80 - 120	1	30
Methylene Chloride			5.00	5.317		ug/L		106	80 - 120	0	30
o-Xylene			5.00	4.722		ug/L		94	80 - 120	1	30
Styrene			5.00	4.972		ug/L		99	80 - 120	0	30
Tetrachloroethene			5.00	5.068		ug/L		101	80 - 120	1	30
Toluene			5.00	5.010		ug/L		100	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	4.891		ug/L		98	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	5.051		ug/L		101	61 - 129	1	30
Trichloroethene			5.00	4.742		ug/L		95	80 - 120	1	30
Trichlorofluoromethane			5.00	3.818		ug/L		76	62 - 136	2	30
Vinyl chloride			5.00	3.566		ug/L		71	60 - 125	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-67216/8
Matrix: Water
Analysis Batch: 67216

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	15.60		ug/L		125	38 - 145	6	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*

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

Lab Sample ID: LCSD 410-67216/8
Matrix: Water
Analysis Batch: 67216

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

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 410-64131/1-B
Matrix: Water
Analysis Batch: 65835

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 64131

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	0.0500	U	0.0500		mg/L		11/10/20 08:44	11/13/20 22:18	1
Diesel	0.0500	U	0.0500		mg/L		11/10/20 08:44	11/13/20 22:18	1
C16-C36	0.125	U	0.125		mg/L		11/10/20 08:44	11/13/20 22:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*15*	*X*	*50 - 150*	*11/10/20 08:44*	*11/13/20 22:18*	*1*
Chlorobenzene (Surr)	*12*	*X*	*50 - 150*	*11/10/20 08:44*	*11/13/20 22:18*	*1*

Lab Sample ID: LCS 410-64131/2-B
Matrix: Water
Analysis Batch: 65835

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64131

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel			0.805	0.5417		mg/L		67	60 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o- terphenyl (Surr)	*81*		*50 - 150*
Chlorobenzene (Surr)	*51*		*50 - 150*

Lab Sample ID: LCSD 410-64131/3-B
Matrix: Water
Analysis Batch: 65835

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 64131

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel			0.805	0.6251		mg/L		78	60 - 120	14	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o- terphenyl (Surr)	*101*		*50 - 150*
Chlorobenzene (Surr)	*62*		*50 - 150*

Lab Sample ID: 410-19949-1 DU
Matrix: Water
Analysis Batch: 65835

Client Sample ID: LAI-8-1120
Prep Type: Total/NA
Prep Batch: 64131

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
C12-C24	133			150.5		mg/L				12	20
Diesel	170			191.9		mg/L				12	20

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 410-19949-1 DU
Matrix: Water
Analysis Batch: 65835

Client Sample ID: LAI-8-1120
Prep Type: Total/NA
Prep Batch: 64131

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
C16-C36	246			279.5		mg/L				13	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o- terphenyl (Surr)	*1000*	*X*	*50 - 150*
Chlorobenzene (Surr)	*168*	*X*	*50 - 150*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-64739/4
Matrix: Water
Analysis Batch: 64739

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.100	U	0.100		mg/L			11/11/20 11:01	1

Lab Sample ID: LCS 410-64739/3
Matrix: Water
Analysis Batch: 64739

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.6988		mg/L		93	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-64740/4
Matrix: Water
Analysis Batch: 64740

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/11/20 11:01	1

Lab Sample ID: LCS 410-64740/3
Matrix: Water
Analysis Batch: 64740

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.023		mg/L		94	90 - 110		

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-70930/37
Matrix: Water
Analysis Batch: 70930

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			11/26/20 06:01	1

Client: Landau & Associates, Inc.
Job ID: 410-19949-1
Project/Site: Boeing of Portland 0025116.120.412

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav (Continued)

Lab Sample ID: LCS 410-70930/36
Matrix: Water
Analysis Batch: 70930

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	25.39		mg/L		102	91 - 113

QC Association Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19949-1

GC/MS VOA

Analysis Batch: 66620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19949-2	Trip blanks	Total/NA	Water	8260C LL	
MB 410-66620/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-66620/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-66620/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-66620/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-66620/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Analysis Batch: 67216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19949-1	LAI-8-1120	Total/NA	Water	8260C LL	
MB 410-67216/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-67216/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-67216/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-67216/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-67216/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

GC Semi VOA

Prep Batch: 64131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19949-1	LAI-8-1120	Total/NA	Water	3510C	
MB 410-64131/1-B	Method Blank	Total/NA	Water	3510C	
LCS 410-64131/2-B	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-64131/3-B	Lab Control Sample Dup	Total/NA	Water	3510C	
410-19949-1 DU	LAI-8-1120	Total/NA	Water	3510C	

Cleanup Batch: 65527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19949-1	LAI-8-1120	Total/NA	Water	3630C	64131
MB 410-64131/1-B	Method Blank	Total/NA	Water	3630C	64131
LCS 410-64131/2-B	Lab Control Sample	Total/NA	Water	3630C	64131
LCSD 410-64131/3-B	Lab Control Sample Dup	Total/NA	Water	3630C	64131
410-19949-1 DU	LAI-8-1120	Total/NA	Water	3630C	64131

Analysis Batch: 65835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19949-1	LAI-8-1120	Total/NA	Water	NWTPH-Dx	65527
MB 410-64131/1-B	Method Blank	Total/NA	Water	NWTPH-Dx	65527
LCS 410-64131/2-B	Lab Control Sample	Total/NA	Water	NWTPH-Dx	65527
LCSD 410-64131/3-B	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	65527
410-19949-1 DU	LAI-8-1120	Total/NA	Water	NWTPH-Dx	65527

HPLC/IC

Analysis Batch: 64739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19949-1	LAI-8-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-64739/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-64739/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

QC Association Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19949-1

HPLC/IC

Analysis Batch: 64740

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19949-1	LAI-8-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-64740/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-64740/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

General Chemistry

Analysis Batch: 70930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19949-1	LAI-8-1120	Total/NA	Water	5310C-2011	
MB 410-70930/37	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-70930/36	Lab Control Sample	Total/NA	Water	5310C-2011	

Lab Chronicle

Client: Landau & Associates, Inc.
Job ID: 410-19949-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: LAI-8-1120
Lab Sample ID: 410-19949-1
Date Collected: 11/06/20 13:45
Matrix: Water
Date Received: 11/07/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	67216	11/18/20 04:20	UCB5	ELLE
Total/NA	Prep	3510C			64131	11/10/20 08:44	QTH7	ELLE
Total/NA	Cleanup	3630C			65527	11/13/20 02:30	USL7	ELLE
Total/NA	Analysis	NWTPH-Dx		50	65835	11/16/20 23:35	UHEW	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	64739	11/11/20 14:27	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	64740	11/11/20 14:27	W5UX	ELLE
Total/NA	Analysis	5310C-2011		5	70930	11/26/20 07:52	NKL9	ELLE

Client Sample ID: Trip blanks
Lab Sample ID: 410-19949-2
Date Collected: 11/06/20 00:00
Matrix: Water
Date Received: 11/07/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	66620	11/16/20 22:50	K4WN	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: 410-19949-1
Project/Site: Boeing of Portland 0025116.120.412

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

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

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
NWTPH-Dx	3510C	Water	C16-C36
NWTPH-Dx	3510C	Water	Diesel

Method Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19949-1

Method	Method Description	Protocol	Laboratory
8260C LL	Volatile Organic Compounds by GC/MS	SW846	ELLE
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
3630C	Silica Gel Cleanup	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbon

SM = "Standard Methods For The Examination Of Water And Wastewater"

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.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19949-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-19949-1	LAI-8-1120	Water	11/06/20 13:45	11/07/20 10:00	
410-19949-2	Trip blanks	Water	11/06/20 00:00	11/07/20 10:00	

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-19949 Chain of Custody

ental use only

ond.

1 Client Information

Site Location: Gresham Oregon
Site Project: Boeing of Portland
Site Program/#: 0025 116.120.412
Boeing PM: Debbie Taege
Consultant Contact: Evelyn Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL/GJN # of Coolers: 1

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	VOC (38 list)	TOC	Sulfate	Nitrate	AMEE -WHL	TPH-Dx	Remarks/Comments
LAI-8-1120	11/6/20	13:45	H_2O	9	X	X	X	X	X	X	
Trip blanks	—	—	H_2O	2							Shared TBs in cooler

4 Analyses Requested

5 Remarks/Comments

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
[signature]	11/6/20 1510	[signature]	
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: [signature]	Date/Time 11/7/2020 1100

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

Temperature upon Receipt: -0.9 °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: 410-19949-1

Login Number: 19949
List Number: 1
Creator: Rivera, Tatiana

List Source: Eurofins Lancaster Laboratories Env

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.	N/A	
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.	True	
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	

eurofins | Environment Testing America



ANALYTICAL REPORT

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

Laboratory Job ID: 410-19950-1
Client Project/Site: Boeing of Portland 0025116.120.412
Revision: 1

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

Attn: Evelyn Ives

Authorized for release by:
12/14/2020 7:04:43 PM

Kay Hower, Principal Project Manager
(717)556-7364
Kay.Hower@eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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. 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. 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.



Kay Hower
Principal Project Manager
12/14/2020 7:04:43 PM

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Detection Summary 7
Client Sample Results 9
Surrogate Summary 21
QC Sample Results 23
QC Association Summary 36
Lab Chronicle 39
Certification Summary 41
Method Summary 42
Sample Summary 43
Chain of Custody 44
Receipt Checklists 45

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.

GC VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate recovery exceeds control limits

HPLC/IC

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

General Chemistry

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: 410-19950-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-19950-1

Revision
The report being provided is a revision of the original report sent on 12/9/2020. The report (revision 1) is being revised due to: revise the comment for TOC preservation.

Receipt
The samples were received on 11/7/2020 10:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was -0.9º C.

GC/MS VOA
Method 8260C LL: The continuing calibration verification (CCV) associated with batch 410-66620 recovered outside acceptance criteria, low biased, for 1,1,1-Trichloroethane, 1,2-Dichloroethane and Carbon tetrachloride. 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.

Method 8260C LL: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): BOP-10i-1120 (410-19950-4). The sample container was received with headspace.

Method 8260C LL: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): E-7-1120 (410-19950-2).

Method 8260C LL: The referenced method allows a maximum of 20% of the analytes in the continuing calibration verification (CCV) associated with batch 410-67216 to exceed the 20% Drift continuing calibration verification criteria. Non-detections of the affected analytes are reported. Any detections are considered estimated.
The affected analyte(s) and response(s) are:

Analyte	Response (%Drift)
Vinyl chloride	-29
Chloroethane	-24
Chloromethane	-27
Vinyl acetate	23
Bromomethane	-32

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

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

GC VOA
Method RSK-175: Surrogate recovery for the following sample was outside control limits: E-7-1120 (410-19950-2). Re-extraction and/or re-analysis was performed and surrogate recovery was outside control limits

Method RSK-175: The following sample(s) were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH at the time of analysis of trial 1 was 5. The pH at the time of analysis of trials 2 and 3 was 4:E-7-1120 (410-19950-2).

Method RSK-175: The continuing calibration verification (CCV) associated with batch 410-64679 recovered above the upper control limit for Acetylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: E-6-1120 (410-19950-1), E-7-1120 (410-19950-2), BOP-09i-1120 (410-19950-3) and BOP-10i-1120 (410-19950-4).

Method RSK-175: The following sample(s) were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH at the time of analysis of trial 1 was 2: BOP-10i-1120 (410-19950-4).

Job ID: 410-19950-1 (Continued)

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Conti

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

General Chemistry
Method SM 5310C: The reference method requires samples to be preserved to a pH of <2. The following sample(s) were received with insufficient preservation at a pH of 6: E-7-1120 (410-19950-2). After adding the maximum amount of preservative the sample remained at a pH of 6.

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

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

Detection Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19950-1

Client Sample ID: E-6-1120 — Lab Sample ID: 410-19950-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	46.9		5.00		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	67.6	E	0.200		ug/L	1		8260C LL	Total/NA
trans-1,2-Dichloroethene	2.84		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	0.480		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	54.9	E	0.200		ug/L	1		8260C LL	Total/NA
Acetone - DL	64.3		50.0		ug/L	10		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	62.9		2.00		ug/L	10		8260C LL	Total/NA
trans-1,2-Dichloroethene - DL	2.68		2.00		ug/L	10		8260C LL	Total/NA
Vinyl chloride - DL	37.7		2.00		ug/L	10		8260C LL	Total/NA
Ethene (1C)	24.2		5.00		ug/L	1		RSK-175	Total/NA
Methane (1C)	1780	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	1940		50.0		ug/L	10		RSK-175	Total/NA
Sulfate	2.07		1.00		mg/L	1		EPA 300.0 R2.1	Total/NA
Total Organic Carbon	6.86		1.00		mg/L	1		5310C-2011	Total/NA

Client Sample ID: E-7-1120 — Lab Sample ID: 410-19950-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.683		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone	5380	E	5.00		ug/L	1		8260C LL	Total/NA
2-Hexanone	33.6		5.00		ug/L	1		8260C LL	Total/NA
Acetone	363	E	5.00		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	18.6		0.200		ug/L	1		8260C LL	Total/NA
Methylene Chloride	1.98		0.500		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	4.53		0.200		ug/L	1		8260C LL	Total/NA
Toluene	1.04		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	21.3		0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	0.218		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone - DL	13200	E	50.0		ug/L	10		8260C LL	Total/NA
Acetone - DL	402		50.0		ug/L	10		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	17.1		2.00		ug/L	10		8260C LL	Total/NA
Tetrachloroethene - DL	3.83		2.00		ug/L	10		8260C LL	Total/NA
Trichloroethene - DL	19.0		2.00		ug/L	10		8260C LL	Total/NA
2-Butanone - DL2	10200		1000		ug/L	200		8260C LL	Total/NA
Ethene (1C)	5.18		5.00		ug/L	1		RSK-175	Total/NA
Methane (1C)	14200	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	21500		500		ug/L	100		RSK-175	Total/NA
Ethene (1C) - RA	7.00		5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - RA	18300	E	5.00		ug/L	1		RSK-175	Total/NA
Sulfate	712		500		mg/L	500		EPA 300.0 R2.1	Total/NA
Total Organic Carbon	21700		500		mg/L	500		5310C-2011	Total/NA

Client Sample ID: BOP-09i-1120 — Lab Sample ID: 410-19950-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
2-Butanone	57.1		10.0		ug/L	2		8260C LL	Total/NA
Acetone	51.2		10.0		ug/L	2		8260C LL	Total/NA
cis-1,2-Dichloroethene	0.895		0.400		ug/L	2		8260C LL	Total/NA
Toluene	92.3	E	0.400		ug/L	2		8260C LL	Total/NA
Vinyl chloride	1.01		0.400		ug/L	2		8260C LL	Total/NA
Toluene - DL	92.7		4.00		ug/L	20		8260C LL	Total/NA
Methane (1C)	24700	E	5.00		ug/L	1		RSK-175	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BOP-09i-1120 (Continued)
Lab Sample ID: 410-19950-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Methane (1C) - DL	27100		1000		ug/L	200		RSK-175	Total/NA
Sulfate	2.52		1.00		mg/L	1		EPA 300.0 R2.1	Total/NA
Total Organic Carbon	49.9		25.0		mg/L	25		5310C-2011	Total/NA

Client Sample ID: BOP-10i-1120
Lab Sample ID: 410-19950-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	1.27		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone	190		5.00		ug/L	1		8260C LL	Total/NA
Carbon disulfide	0.539		0.500		ug/L	1		8260C LL	Total/NA
cis-1,2-Dichloroethene	17.9		0.200		ug/L	1		8260C LL	Total/NA
Tetrachloroethene	9.87		0.200		ug/L	1		8260C LL	Total/NA
Toluene	0.900		0.200		ug/L	1		8260C LL	Total/NA
Trichloroethene	29.5	E	0.200		ug/L	1		8260C LL	Total/NA
Vinyl chloride	1.01		0.200		ug/L	1		8260C LL	Total/NA
2-Butanone - DL	179		50.0		ug/L	10		8260C LL	Total/NA
cis-1,2-Dichloroethene - DL	15.5		2.00		ug/L	10		8260C LL	Total/NA
Tetrachloroethene - DL	9.15		2.00		ug/L	10		8260C LL	Total/NA
Trichloroethene - DL	27.7		2.00		ug/L	10		8260C LL	Total/NA
Methane (1C)	18800	E	5.00		ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	19200		1000		ug/L	200		RSK-175	Total/NA
Total Organic Carbon	988		500		mg/L	500		5310C-2011	Total/NA

Client Sample ID: Trip Blanks
Lab Sample ID: 410-19950-5

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: E-6-1120

Date Collected: 11/06/20 10:34
Date Received: 11/07/20 10:00

Lab Sample ID: 410-19950-1

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			11/17/20 01:02	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/17/20 01:02	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/17/20 01:02	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/17/20 01:02	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/17/20 01:02	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/17/20 01:02	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/17/20 01:02	1
2-Butanone	5.00	U	5.00		ug/L			11/17/20 01:02	1
2-Hexanone	5.00	U	5.00		ug/L			11/17/20 01:02	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/17/20 01:02	1
Acetone	**46.9**		5.00		ug/L			11/17/20 01:02	1
Benzene	0.200	U	0.200		ug/L			11/17/20 01:02	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/17/20 01:02	1
Bromoform	1.00	U	1.00		ug/L			11/17/20 01:02	1
Bromomethane	0.500	U	0.500		ug/L			11/17/20 01:02	1
Carbon disulfide	0.500	U	0.500		ug/L			11/17/20 01:02	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/17/20 01:02	1
Chlorobenzene	0.500	U	0.500		ug/L			11/17/20 01:02	1
Chloroethane	0.500	U	0.500		ug/L			11/17/20 01:02	1
Chloroform	0.200	U	0.200		ug/L			11/17/20 01:02	1
Chloromethane	0.500	U	0.500		ug/L			11/17/20 01:02	1
cis-1,2-Dichloroethene	**67.6**	**E**	0.200		ug/L			11/17/20 01:02	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/17/20 01:02	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/17/20 01:02	1
Ethylbenzene	0.500	U	0.500		ug/L			11/17/20 01:02	1
Freon 113	0.500	U	0.500		ug/L			11/17/20 01:02	1
m&p-Xylene	0.500	U	0.500		ug/L			11/17/20 01:02	1
Methylene Chloride	0.500	U	0.500		ug/L			11/17/20 01:02	1
o-Xylene	0.500	U	0.500		ug/L			11/17/20 01:02	1
Styrene	0.500	U	0.500		ug/L			11/17/20 01:02	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/17/20 01:02	1
Toluene	0.200	U	0.200		ug/L			11/17/20 01:02	1
trans-1,2-Dichloroethene	**2.84**		0.200		ug/L			11/17/20 01:02	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/17/20 01:02	1
Trichloroethene	**0.480**		0.200		ug/L			11/17/20 01:02	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/17/20 01:02	1
Vinyl acetate	0.500	U	0.500		ug/L			11/17/20 01:02	1
Vinyl chloride	**54.9**	**E**	0.200		ug/L			11/17/20 01:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*11/17/20 01:02*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*11/17/20 01:02*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*11/17/20 01:02*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*11/17/20 01:02*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.00	U	5.00		ug/L			11/18/20 02:12	10
1,1,2,2-Tetrachloroethane	2.00	U	2.00		ug/L			11/18/20 02:12	10
1,1,2-Trichloroethane	2.00	U	2.00		ug/L			11/18/20 02:12	10

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19950-1

Client Sample ID: E-6-1120

Date Collected: 11/06/20 10:34
Date Received: 11/07/20 10:00

Lab Sample ID: 410-19950-1

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	5.00	U	5.00		ug/L			11/18/20 02:12	10
1,1-Dichloroethene	2.00	U	2.00		ug/L			11/18/20 02:12	10
1,2-Dichloroethane	2.00	U	2.00		ug/L			11/18/20 02:12	10
1,2-Dichloropropane	5.00	U	5.00		ug/L			11/18/20 02:12	10
2-Butanone	50.0	U	50.0		ug/L			11/18/20 02:12	10
2-Hexanone	50.0	U	50.0		ug/L			11/18/20 02:12	10
4-Methyl-2-pentanone	50.0	U	50.0		ug/L			11/18/20 02:12	10
Acetone	**64.3**		50.0		ug/L			11/18/20 02:12	10
Benzene	2.00	U	2.00		ug/L			11/18/20 02:12	10
Bromodichloromethane	5.00	U	5.00		ug/L			11/18/20 02:12	10
Bromoform	10.0	U	10.0		ug/L			11/18/20 02:12	10
Bromomethane	5.00	U	5.00		ug/L			11/18/20 02:12	10
Carbon disulfide	5.00	U	5.00		ug/L			11/18/20 02:12	10
Carbon tetrachloride	2.00	U	2.00		ug/L			11/18/20 02:12	10
Chlorobenzene	5.00	U	5.00		ug/L			11/18/20 02:12	10
Chloroethane	5.00	U	5.00		ug/L			11/18/20 02:12	10
Chloroform	2.00	U	2.00		ug/L			11/18/20 02:12	10
Chloromethane	5.00	U	5.00		ug/L			11/18/20 02:12	10
cis-1,2-Dichloroethene	**62.9**		2.00		ug/L			11/18/20 02:12	10
cis-1,3-Dichloropropene	2.00	U	2.00		ug/L			11/18/20 02:12	10
Dibromochloromethane	5.00	U	5.00		ug/L			11/18/20 02:12	10
Ethylbenzene	5.00	U	5.00		ug/L			11/18/20 02:12	10
Freon 113	5.00	U	5.00		ug/L			11/18/20 02:12	10
m&p-Xylene	5.00	U	5.00		ug/L			11/18/20 02:12	10
Methylene Chloride	5.00	U	5.00		ug/L			11/18/20 02:12	10
o-Xylene	5.00	U	5.00		ug/L			11/18/20 02:12	10
Styrene	5.00	U	5.00		ug/L			11/18/20 02:12	10
Tetrachloroethene	2.00	U	2.00		ug/L			11/18/20 02:12	10
Toluene	2.00	U	2.00		ug/L			11/18/20 02:12	10
trans-1,2-Dichloroethene	**2.68**		2.00		ug/L			11/18/20 02:12	10
trans-1,3-Dichloropropene	2.00	U	2.00		ug/L			11/18/20 02:12	10
Trichloroethene	2.00	U	2.00		ug/L			11/18/20 02:12	10
Trichlorofluoromethane	5.00	U	5.00		ug/L			11/18/20 02:12	10
Vinyl acetate	5.00	U	5.00		ug/L			11/18/20 02:12	10
Vinyl chloride	**37.7**		2.00		ug/L			11/18/20 02:12	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*11/18/20 02:12*	*10*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*11/18/20 02:12*	*10*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*11/18/20 02:12*	*10*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/18/20 02:12*	*10*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/10/20 09:09	11/10/20 19:38	1
Ethane (1C)	5.00	U	5.00		ug/L		11/10/20 09:09	11/10/20 19:38	1
Ethene (1C)	**24.2**		5.00		ug/L		11/10/20 09:09	11/10/20 19:38	1
Methane (1C)	**1780**	**E**	5.00		ug/L		11/10/20 09:09	11/10/20 19:38	1

Client Sample ID: E-6-1120

Date Collected: 11/06/20 10:34
Date Received: 11/07/20 10:00

Lab Sample ID: 410-19950-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*85*		*28 - 140*	*11/10/20 09:09*	*11/10/20 19:38*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	50.0	U	50.0		ug/L		11/11/20 09:10	11/11/20 15:44	10
Ethane (1C)	50.0	U	50.0		ug/L		11/11/20 09:10	11/11/20 15:44	10
Ethene (1C)	50.0	U	50.0		ug/L		11/11/20 09:10	11/11/20 15:44	10
Methane (1C)	**1940**		50.0		ug/L		11/11/20 09:10	11/11/20 15:44	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*96*		*28 - 140*	*11/11/20 09:10*	*11/11/20 15:44*	*10*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**2.07**		1.00		mg/L			11/25/20 01:01	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**6.86**		1.00		mg/L			12/01/20 13:51	1

Client Sample ID: E-7-1120

Date Collected: 11/06/20 11:23
Date Received: 11/07/20 10:00

Lab Sample ID: 410-19950-2

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			11/18/20 05:03	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/18/20 05:03	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/18/20 05:03	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/18/20 05:03	1
1,1-Dichloroethene	**0.683**		0.200		ug/L			11/18/20 05:03	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/18/20 05:03	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/18/20 05:03	1
2-Butanone	**5380**	**E**	5.00		ug/L			11/18/20 05:03	1
2-Hexanone	**33.6**		5.00		ug/L			11/18/20 05:03	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/18/20 05:03	1
Acetone	**363**	**E**	5.00		ug/L			11/18/20 05:03	1
Benzene	0.200	U	0.200		ug/L			11/18/20 05:03	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/18/20 05:03	1
Bromoform	1.00	U	1.00		ug/L			11/18/20 05:03	1
Bromomethane	0.500	U	0.500		ug/L			11/18/20 05:03	1
Carbon disulfide	0.500	U	0.500		ug/L			11/18/20 05:03	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/18/20 05:03	1
Chlorobenzene	0.500	U	0.500		ug/L			11/18/20 05:03	1
Chloroethane	0.500	U	0.500		ug/L			11/18/20 05:03	1
Chloroform	0.200	U	0.200		ug/L			11/18/20 05:03	1
Chloromethane	0.500	U	0.500		ug/L			11/18/20 05:03	1
cis-1,2-Dichloroethene	**18.6**		0.200		ug/L			11/18/20 05:03	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/18/20 05:03	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/18/20 05:03	1
Ethylbenzene	0.500	U	0.500		ug/L			11/18/20 05:03	1

Client Sample ID: E-7-1120
Date Collected: 11/06/20 11:23
Date Received: 11/07/20 10:00

Lab Sample ID: 410-19950-2
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Freon 113	0.500	U	0.500		ug/L			11/18/20 05:03	1
m&p-Xylene	0.500	U	0.500		ug/L			11/18/20 05:03	1
Methylene Chloride	**1.98**		0.500		ug/L			11/18/20 05:03	1
o-Xylene	0.500	U	0.500		ug/L			11/18/20 05:03	1
Styrene	0.500	U	0.500		ug/L			11/18/20 05:03	1
Tetrachloroethene	**4.53**		0.200		ug/L			11/18/20 05:03	1
Toluene	**1.04**		0.200		ug/L			11/18/20 05:03	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/18/20 05:03	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/18/20 05:03	1
Trichloroethene	**21.3**		0.200		ug/L			11/18/20 05:03	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/18/20 05:03	1
Vinyl acetate	0.500	U	0.500		ug/L			11/18/20 05:03	1
Vinyl chloride	**0.218**		0.200		ug/L			11/18/20 05:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*11/18/20 05:03*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*11/18/20 05:03*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/18/20 05:03*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/18/20 05:03*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.00	U	5.00		ug/L			11/18/20 04:41	10
1,1,2,2-Tetrachloroethane	2.00	U	2.00		ug/L			11/18/20 04:41	10
1,1,2-Trichloroethane	2.00	U	2.00		ug/L			11/18/20 04:41	10
1,1-Dichloroethane	5.00	U	5.00		ug/L			11/18/20 04:41	10
1,1-Dichloroethene	2.00	U	2.00		ug/L			11/18/20 04:41	10
1,2-Dichloroethane	2.00	U	2.00		ug/L			11/18/20 04:41	10
1,2-Dichloropropane	5.00	U	5.00		ug/L			11/18/20 04:41	10
2-Butanone	**13200**	**E**	50.0		ug/L			11/18/20 04:41	10
2-Hexanone	50.0	U	50.0		ug/L			11/18/20 04:41	10
4-Methyl-2-pentanone	50.0	U	50.0		ug/L			11/18/20 04:41	10
Acetone	**402**		50.0		ug/L			11/18/20 04:41	10
Benzene	2.00	U	2.00		ug/L			11/18/20 04:41	10
Bromodichloromethane	5.00	U	5.00		ug/L			11/18/20 04:41	10
Bromoform	10.0	U	10.0		ug/L			11/18/20 04:41	10
Bromomethane	5.00	U	5.00		ug/L			11/18/20 04:41	10
Carbon disulfide	5.00	U	5.00		ug/L			11/18/20 04:41	10
Carbon tetrachloride	2.00	U	2.00		ug/L			11/18/20 04:41	10
Chlorobenzene	5.00	U	5.00		ug/L			11/18/20 04:41	10
Chloroethane	5.00	U	5.00		ug/L			11/18/20 04:41	10
Chloroform	2.00	U	2.00		ug/L			11/18/20 04:41	10
Chloromethane	5.00	U	5.00		ug/L			11/18/20 04:41	10
cis-1,2-Dichloroethene	**17.1**		2.00		ug/L			11/18/20 04:41	10
cis-1,3-Dichloropropene	2.00	U	2.00		ug/L			11/18/20 04:41	10
Dibromochloromethane	5.00	U	5.00		ug/L			11/18/20 04:41	10
Ethylbenzene	5.00	U	5.00		ug/L			11/18/20 04:41	10
Freon 113	5.00	U	5.00		ug/L			11/18/20 04:41	10
m&p-Xylene	5.00	U	5.00		ug/L			11/18/20 04:41	10
Methylene Chloride	5.00	U	5.00		ug/L			11/18/20 04:41	10

Client Sample ID: E-7-1120
Lab Sample ID: 410-19950-2
Date Collected: 11/06/20 11:23
Matrix: Water
Date Received: 11/07/20 10:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	5.00	U	5.00		ug/L			11/18/20 04:41	10
Styrene	5.00	U	5.00		ug/L			11/18/20 04:41	10
Tetrachloroethene	**3.83**		2.00		ug/L			11/18/20 04:41	10
Toluene	2.00	U	2.00		ug/L			11/18/20 04:41	10
trans-1,2-Dichloroethene	2.00	U	2.00		ug/L			11/18/20 04:41	10
trans-1,3-Dichloropropene	2.00	U	2.00		ug/L			11/18/20 04:41	10
Trichloroethene	**19.0**		2.00		ug/L			11/18/20 04:41	10
Trichlorofluoromethane	5.00	U	5.00		ug/L			11/18/20 04:41	10
Vinyl acetate	5.00	U	5.00		ug/L			11/18/20 04:41	10
Vinyl chloride	2.00	U	2.00		ug/L			11/18/20 04:41	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*11/18/20 04:41*	*10*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*11/18/20 04:41*	*10*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/18/20 04:41*	*10*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/18/20 04:41*	*10*

Method: 8260C LL - Volatile Organic Compounds by GC/MS - DL2

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	100	U	100		ug/L			11/18/20 19:34	200
1,1,2,2-Tetrachloroethane	40.0	U	40.0		ug/L			11/18/20 19:34	200
1,1,2-Trichloroethane	40.0	U	40.0		ug/L			11/18/20 19:34	200
1,1-Dichloroethane	100	U	100		ug/L			11/18/20 19:34	200
1,1-Dichloroethene	40.0	U	40.0		ug/L			11/18/20 19:34	200
1,2-Dichloroethane	40.0	U	40.0		ug/L			11/18/20 19:34	200
1,2-Dichloropropane	100	U	100		ug/L			11/18/20 19:34	200
2-Butanone	**10200**		1000		ug/L			11/18/20 19:34	200
2-Hexanone	1000	U	1000		ug/L			11/18/20 19:34	200
4-Methyl-2-pentanone	1000	U	1000		ug/L			11/18/20 19:34	200
Acetone	1000	U	1000		ug/L			11/18/20 19:34	200
Benzene	40.0	U	40.0		ug/L			11/18/20 19:34	200
Bromodichloromethane	100	U	100		ug/L			11/18/20 19:34	200
Bromoform	200	U	200		ug/L			11/18/20 19:34	200
Bromomethane	100	U	100		ug/L			11/18/20 19:34	200
Carbon disulfide	100	U	100		ug/L			11/18/20 19:34	200
Carbon tetrachloride	40.0	U	40.0		ug/L			11/18/20 19:34	200
Chlorobenzene	100	U	100		ug/L			11/18/20 19:34	200
Chloroethane	100	U	100		ug/L			11/18/20 19:34	200
Chloroform	40.0	U	40.0		ug/L			11/18/20 19:34	200
Chloromethane	100	U	100		ug/L			11/18/20 19:34	200
cis-1,2-Dichloroethene	40.0	U	40.0		ug/L			11/18/20 19:34	200
cis-1,3-Dichloropropene	40.0	U	40.0		ug/L			11/18/20 19:34	200
Dibromochloromethane	100	U	100		ug/L			11/18/20 19:34	200
Ethylbenzene	100	U	100		ug/L			11/18/20 19:34	200
Freon 113	100	U	100		ug/L			11/18/20 19:34	200
m&p-Xylene	100	U	100		ug/L			11/18/20 19:34	200
Methylene Chloride	100	U	100		ug/L			11/18/20 19:34	200
o-Xylene	100	U	100		ug/L			11/18/20 19:34	200
Styrene	100	U	100		ug/L			11/18/20 19:34	200
Tetrachloroethene	40.0	U	40.0		ug/L			11/18/20 19:34	200

Client Sample ID: E-7-1120

Date Collected: 11/06/20 11:23
Date Received: 11/07/20 10:00

Lab Sample ID: 410-19950-2

Matrix: Water

Method: 8260C LL - Volatile Organic Compounds by GC/MS - DL2 (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Toluene	40.0	U	40.0		ug/L			11/18/20 19:34	200
trans-1,2-Dichloroethene	40.0	U	40.0		ug/L			11/18/20 19:34	200
trans-1,3-Dichloropropene	40.0	U	40.0		ug/L			11/18/20 19:34	200
Trichloroethene	40.0	U	40.0		ug/L			11/18/20 19:34	200
Trichlorofluoromethane	100	U	100		ug/L			11/18/20 19:34	200
Vinyl acetate	100	U	100		ug/L			11/18/20 19:34	200
Vinyl chloride	40.0	U	40.0		ug/L			11/18/20 19:34	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*11/18/20 19:34*	*200*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*11/18/20 19:34*	*200*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/18/20 19:34*	*200*
Toluene-d8 (Surr)	*97*		*80 - 120*		*11/18/20 19:34*	*200*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/10/20 09:09	11/10/20 19:56	1
Ethane (1C)	5.00	U	5.00		ug/L		11/10/20 09:09	11/10/20 19:56	1
Ethene (1C)	**5.18**		5.00		ug/L		11/10/20 09:09	11/10/20 19:56	1
Methane (1C)	**14200**	**E**	5.00		ug/L		11/10/20 09:09	11/10/20 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*2066*	*X*	*28 - 140*	*11/10/20 09:09*	*11/10/20 19:56*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	500	U	500		ug/L		11/11/20 09:10	11/11/20 16:22	100
Ethane (1C)	500	U	500		ug/L		11/11/20 09:10	11/11/20 16:22	100
Ethene (1C)	500	U	500		ug/L		11/11/20 09:10	11/11/20 16:22	100
Methane (1C)	**21500**		500		ug/L		11/11/20 09:10	11/11/20 16:22	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*100*		*28 - 140*	*11/11/20 09:10*	*11/11/20 16:22*	*100*

Method: RSK-175 - Dissolved Gases (GC) - RA

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/11/20 09:10	11/11/20 16:03	1
Ethane (1C)	5.00	U	5.00		ug/L		11/11/20 09:10	11/11/20 16:03	1
Ethene (1C)	**7.00**		5.00		ug/L		11/11/20 09:10	11/11/20 16:03	1
Methane (1C)	**18300**	**E**	5.00		ug/L		11/11/20 09:10	11/11/20 16:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*2188*	*X*	*28 - 140*	*11/11/20 09:10*	*11/11/20 16:03*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**712**		500		mg/L			11/23/20 22:50	500

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**21700**		500		mg/L			11/26/20 08:20	500

Client Sample ID: BOP-09i-1120

Date Collected: 11/06/20 09:23
Date Received: 11/07/20 10:00

Lab Sample ID: 410-19950-3

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	1.00	U	1.00		ug/L			11/18/20 05:45	2
1,1,2,2-Tetrachloroethane	0.400	U	0.400		ug/L			11/18/20 05:45	2
1,1,2-Trichloroethane	0.400	U	0.400		ug/L			11/18/20 05:45	2
1,1-Dichloroethane	1.00	U	1.00		ug/L			11/18/20 05:45	2
1,1-Dichloroethene	0.400	U	0.400		ug/L			11/18/20 05:45	2
1,2-Dichloroethane	0.400	U	0.400		ug/L			11/18/20 05:45	2
1,2-Dichloropropane	1.00	U	1.00		ug/L			11/18/20 05:45	2
2-Butanone	**57.1**		10.0		ug/L			11/18/20 05:45	2
2-Hexanone	10.0	U	10.0		ug/L			11/18/20 05:45	2
4-Methyl-2-pentanone	10.0	U	10.0		ug/L			11/18/20 05:45	2
Acetone	**51.2**		10.0		ug/L			11/18/20 05:45	2
Benzene	0.400	U	0.400		ug/L			11/18/20 05:45	2
Bromodichloromethane	1.00	U	1.00		ug/L			11/18/20 05:45	2
Bromoform	2.00	U	2.00		ug/L			11/18/20 05:45	2
Bromomethane	1.00	U	1.00		ug/L			11/18/20 05:45	2
Carbon disulfide	1.00	U	1.00		ug/L			11/18/20 05:45	2
Carbon tetrachloride	0.400	U	0.400		ug/L			11/18/20 05:45	2
Chlorobenzene	1.00	U	1.00		ug/L			11/18/20 05:45	2
Chloroethane	1.00	U	1.00		ug/L			11/18/20 05:45	2
Chloroform	0.400	U	0.400		ug/L			11/18/20 05:45	2
Chloromethane	1.00	U	1.00		ug/L			11/18/20 05:45	2
cis-1,2-Dichloroethene	**0.895**		0.400		ug/L			11/18/20 05:45	2
cis-1,3-Dichloropropene	0.400	U	0.400		ug/L			11/18/20 05:45	2
Dibromochloromethane	1.00	U	1.00		ug/L			11/18/20 05:45	2
Ethylbenzene	1.00	U	1.00		ug/L			11/18/20 05:45	2
Freon 113	1.00	U	1.00		ug/L			11/18/20 05:45	2
m&p-Xylene	1.00	U	1.00		ug/L			11/18/20 05:45	2
Methylene Chloride	1.00	U	1.00		ug/L			11/18/20 05:45	2
o-Xylene	1.00	U	1.00		ug/L			11/18/20 05:45	2
Styrene	1.00	U	1.00		ug/L			11/18/20 05:45	2
Tetrachloroethene	0.400	U	0.400		ug/L			11/18/20 05:45	2
Toluene	**92.3**	**E**	0.400		ug/L			11/18/20 05:45	2
trans-1,2-Dichloroethene	0.400	U	0.400		ug/L			11/18/20 05:45	2
trans-1,3-Dichloropropene	0.400	U	0.400		ug/L			11/18/20 05:45	2
Trichloroethene	0.400	U	0.400		ug/L			11/18/20 05:45	2
Trichlorofluoromethane	1.00	U	1.00		ug/L			11/18/20 05:45	2
Vinyl acetate	1.00	U	1.00		ug/L			11/18/20 05:45	2
Vinyl chloride	**1.01**		0.400		ug/L			11/18/20 05:45	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*11/18/20 05:45*	*2*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*11/18/20 05:45*	*2*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*11/18/20 05:45*	*2*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/18/20 05:45*	*2*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	10.0	U	10.0		ug/L			11/18/20 06:06	20
1,1,2,2-Tetrachloroethane	4.00	U	4.00		ug/L			11/18/20 06:06	20
1,1,2-Trichloroethane	4.00	U	4.00		ug/L			11/18/20 06:06	20

Client Sample ID: BOP-09i-1120
Date Collected: 11/06/20 09:23
Date Received: 11/07/20 10:00

Lab Sample ID: 410-19950-3
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	10.0	U	10.0		ug/L			11/18/20 06:06	20
1,1-Dichloroethene	4.00	U	4.00		ug/L			11/18/20 06:06	20
1,2-Dichloroethane	4.00	U	4.00		ug/L			11/18/20 06:06	20
1,2-Dichloropropane	10.0	U	10.0		ug/L			11/18/20 06:06	20
2-Butanone	100	U	100		ug/L			11/18/20 06:06	20
2-Hexanone	100	U	100		ug/L			11/18/20 06:06	20
4-Methyl-2-pentanone	100	U	100		ug/L			11/18/20 06:06	20
Acetone	100	U	100		ug/L			11/18/20 06:06	20
Benzene	4.00	U	4.00		ug/L			11/18/20 06:06	20
Bromodichloromethane	10.0	U	10.0		ug/L			11/18/20 06:06	20
Bromoform	20.0	U	20.0		ug/L			11/18/20 06:06	20
Bromomethane	10.0	U	10.0		ug/L			11/18/20 06:06	20
Carbon disulfide	10.0	U	10.0		ug/L			11/18/20 06:06	20
Carbon tetrachloride	4.00	U	4.00		ug/L			11/18/20 06:06	20
Chlorobenzene	10.0	U	10.0		ug/L			11/18/20 06:06	20
Chloroethane	10.0	U	10.0		ug/L			11/18/20 06:06	20
Chloroform	4.00	U	4.00		ug/L			11/18/20 06:06	20
Chloromethane	10.0	U	10.0		ug/L			11/18/20 06:06	20
cis-1,2-Dichloroethene	4.00	U	4.00		ug/L			11/18/20 06:06	20
cis-1,3-Dichloropropene	4.00	U	4.00		ug/L			11/18/20 06:06	20
Dibromochloromethane	10.0	U	10.0		ug/L			11/18/20 06:06	20
Ethylbenzene	10.0	U	10.0		ug/L			11/18/20 06:06	20
Freon 113	10.0	U	10.0		ug/L			11/18/20 06:06	20
m&p-Xylene	10.0	U	10.0		ug/L			11/18/20 06:06	20
Methylene Chloride	10.0	U	10.0		ug/L			11/18/20 06:06	20
o-Xylene	10.0	U	10.0		ug/L			11/18/20 06:06	20
Styrene	10.0	U	10.0		ug/L			11/18/20 06:06	20
Tetrachloroethene	4.00	U	4.00		ug/L			11/18/20 06:06	20
Toluene	**92.7**		4.00		ug/L			11/18/20 06:06	20
trans-1,2-Dichloroethene	4.00	U	4.00		ug/L			11/18/20 06:06	20
trans-1,3-Dichloropropene	4.00	U	4.00		ug/L			11/18/20 06:06	20
Trichloroethene	4.00	U	4.00		ug/L			11/18/20 06:06	20
Trichlorofluoromethane	10.0	U	10.0		ug/L			11/18/20 06:06	20
Vinyl acetate	10.0	U	10.0		ug/L			11/18/20 06:06	20
Vinyl chloride	4.00	U	4.00		ug/L			11/18/20 06:06	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*11/18/20 06:06*	*20*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/18/20 06:06*	*20*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*11/18/20 06:06*	*20*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/18/20 06:06*	*20*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/10/20 09:09	11/10/20 20:33	1
Ethane (1C)	5.00	U	5.00		ug/L		11/10/20 09:09	11/10/20 20:33	1
Ethene (1C)	5.00	U	5.00		ug/L		11/10/20 09:09	11/10/20 20:33	1
Methane (1C)	**24700**	**E**	5.00		ug/L		11/10/20 09:09	11/10/20 20:33	1

Client Sample ID: BOP-09i-1120
Lab Sample ID: 410-19950-3
Date Collected: 11/06/20 09:23
Matrix: Water
Date Received: 11/07/20 10:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*89*		*28 - 140*	*11/10/20 09:09*	*11/10/20 20:33*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	1000	U	1000		ug/L		11/11/20 09:11	11/11/20 16:40	200
Ethane (1C)	1000	U	1000		ug/L		11/11/20 09:11	11/11/20 16:40	200
Ethene (1C)	1000	U	1000		ug/L		11/11/20 09:11	11/11/20 16:40	200
Methane (1C)	**27100**		1000		ug/L		11/11/20 09:11	11/11/20 16:40	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*98*		*28 - 140*	*11/11/20 09:11*	*11/11/20 16:40*	*200*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**2.52**		1.00		mg/L			11/25/20 03:15	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**49.9**		25.0		mg/L			11/26/20 08:34	25

Client Sample ID: BOP-10i-1120
Lab Sample ID: 410-19950-4
Date Collected: 11/06/20 12:35
Matrix: Water
Date Received: 11/07/20 10:00

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			11/17/20 01:24	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/17/20 01:24	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/17/20 01:24	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/17/20 01:24	1
1,1-Dichloroethene	**1.27**		0.200		ug/L			11/17/20 01:24	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/17/20 01:24	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/17/20 01:24	1
2-Butanone	**190**		5.00		ug/L			11/17/20 01:24	1
2-Hexanone	5.00	U	5.00		ug/L			11/17/20 01:24	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/17/20 01:24	1
Acetone	5.00	U	5.00		ug/L			11/17/20 01:24	1
Benzene	0.200	U	0.200		ug/L			11/17/20 01:24	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/17/20 01:24	1
Bromoform	1.00	U	1.00		ug/L			11/17/20 01:24	1
Bromomethane	0.500	U	0.500		ug/L			11/17/20 01:24	1
Carbon disulfide	**0.539**		0.500		ug/L			11/17/20 01:24	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/17/20 01:24	1
Chlorobenzene	0.500	U	0.500		ug/L			11/17/20 01:24	1
Chloroethane	0.500	U	0.500		ug/L			11/17/20 01:24	1
Chloroform	0.200	U	0.200		ug/L			11/17/20 01:24	1
Chloromethane	0.500	U	0.500		ug/L			11/17/20 01:24	1
cis-1,2-Dichloroethene	**17.9**		0.200		ug/L			11/17/20 01:24	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/17/20 01:24	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/17/20 01:24	1
Ethylbenzene	0.500	U	0.500		ug/L			11/17/20 01:24	1

Client: Landau & Associates, Inc.
Job ID: 410-19950-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: BOP-10i-1120
Lab Sample ID: 410-19950-4
Date Collected: 11/06/20 12:35
Matrix: Water
Date Received: 11/07/20 10:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Freon 113	0.500	U	0.500		ug/L			11/17/20 01:24	1
m&p-Xylene	0.500	U	0.500		ug/L			11/17/20 01:24	1
Methylene Chloride	0.500	U	0.500		ug/L			11/17/20 01:24	1
o-Xylene	0.500	U	0.500		ug/L			11/17/20 01:24	1
Styrene	0.500	U	0.500		ug/L			11/17/20 01:24	1
Tetrachloroethene	**9.87**		0.200		ug/L			11/17/20 01:24	1
Toluene	**0.900**		0.200		ug/L			11/17/20 01:24	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/17/20 01:24	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/17/20 01:24	1
Trichloroethene	**29.5**	**E**	0.200		ug/L			11/17/20 01:24	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/17/20 01:24	1
Vinyl acetate	0.500	U	0.500		ug/L			11/17/20 01:24	1
Vinyl chloride	**1.01**		0.200		ug/L			11/17/20 01:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/17/20 01:24*	*1*
Dibromofluoromethane (Surr)	*92*		*80 - 120*		*11/17/20 01:24*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/17/20 01:24*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*11/17/20 01:24*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.00	U	5.00		ug/L			11/18/20 02:33	10
1,1,2,2-Tetrachloroethane	2.00	U	2.00		ug/L			11/18/20 02:33	10
1,1,2-Trichloroethane	2.00	U	2.00		ug/L			11/18/20 02:33	10
1,1-Dichloroethane	5.00	U	5.00		ug/L			11/18/20 02:33	10
1,1-Dichloroethene	2.00	U	2.00		ug/L			11/18/20 02:33	10
1,2-Dichloroethane	2.00	U	2.00		ug/L			11/18/20 02:33	10
1,2-Dichloropropane	5.00	U	5.00		ug/L			11/18/20 02:33	10
2-Butanone	**179**		50.0		ug/L			11/18/20 02:33	10
2-Hexanone	50.0	U	50.0		ug/L			11/18/20 02:33	10
4-Methyl-2-pentanone	50.0	U	50.0		ug/L			11/18/20 02:33	10
Acetone	50.0	U	50.0		ug/L			11/18/20 02:33	10
Benzene	2.00	U	2.00		ug/L			11/18/20 02:33	10
Bromodichloromethane	5.00	U	5.00		ug/L			11/18/20 02:33	10
Bromoform	10.0	U	10.0		ug/L			11/18/20 02:33	10
Bromomethane	5.00	U	5.00		ug/L			11/18/20 02:33	10
Carbon disulfide	5.00	U	5.00		ug/L			11/18/20 02:33	10
Carbon tetrachloride	2.00	U	2.00		ug/L			11/18/20 02:33	10
Chlorobenzene	5.00	U	5.00		ug/L			11/18/20 02:33	10
Chloroethane	5.00	U	5.00		ug/L			11/18/20 02:33	10
Chloroform	2.00	U	2.00		ug/L			11/18/20 02:33	10
Chloromethane	5.00	U	5.00		ug/L			11/18/20 02:33	10
cis-1,2-Dichloroethene	**15.5**		2.00		ug/L			11/18/20 02:33	10
cis-1,3-Dichloropropene	2.00	U	2.00		ug/L			11/18/20 02:33	10
Dibromochloromethane	5.00	U	5.00		ug/L			11/18/20 02:33	10
Ethylbenzene	5.00	U	5.00		ug/L			11/18/20 02:33	10
Freon 113	5.00	U	5.00		ug/L			11/18/20 02:33	10
m&p-Xylene	5.00	U	5.00		ug/L			11/18/20 02:33	10
Methylene Chloride	5.00	U	5.00		ug/L			11/18/20 02:33	10

Client Sample ID: BOP-10i-1120

Date Collected: 11/06/20 12:35
Date Received: 11/07/20 10:00

Lab Sample ID: 410-19950-4

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	5.00	U	5.00		ug/L			11/18/20 02:33	10
Styrene	5.00	U	5.00		ug/L			11/18/20 02:33	10
Tetrachloroethene	**9.15**		2.00		ug/L			11/18/20 02:33	10
Toluene	2.00	U	2.00		ug/L			11/18/20 02:33	10
trans-1,2-Dichloroethene	2.00	U	2.00		ug/L			11/18/20 02:33	10
trans-1,3-Dichloropropene	2.00	U	2.00		ug/L			11/18/20 02:33	10
Trichloroethene	**27.7**		2.00		ug/L			11/18/20 02:33	10
Trichlorofluoromethane	5.00	U	5.00		ug/L			11/18/20 02:33	10
Vinyl acetate	5.00	U	5.00		ug/L			11/18/20 02:33	10
Vinyl chloride	2.00	U	2.00		ug/L			11/18/20 02:33	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*11/18/20 02:33*	*10*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*11/18/20 02:33*	*10*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*11/18/20 02:33*	*10*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/18/20 02:33*	*10*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/10/20 09:09	11/10/20 20:51	1
Ethane (1C)	5.00	U	5.00		ug/L		11/10/20 09:09	11/10/20 20:51	1
Ethene (1C)	5.00	U	5.00		ug/L		11/10/20 09:09	11/10/20 20:51	1
Methane (1C)	**18800**	**E**	5.00		ug/L		11/10/20 09:09	11/10/20 20:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*84*		*28 - 140*	*11/10/20 09:09*	*11/10/20 20:51*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	1000	U	1000		ug/L		11/11/20 09:13	11/11/20 16:59	200
Ethane (1C)	1000	U	1000		ug/L		11/11/20 09:13	11/11/20 16:59	200
Ethene (1C)	1000	U	1000		ug/L		11/11/20 09:13	11/11/20 16:59	200
Methane (1C)	**19200**		1000		ug/L		11/11/20 09:13	11/11/20 16:59	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*99*		*28 - 140*	*11/11/20 09:13*	*11/11/20 16:59*	*200*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/25/20 21:41	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**988**		500		mg/L			11/26/20 08:48	500

Client Sample ID: Trip Blanks

Date Collected: 11/06/20 00:00
Date Received: 11/07/20 10:00

Lab Sample ID: 410-19950-5

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			11/16/20 23:12	1

Client: Landau & Associates, Inc.
Job ID: 410-19950-1
Project/Site: Boeing of Portland 0025116.120.412

Client Sample ID: Trip Blanks
Lab Sample ID: 410-19950-5
Date Collected: 11/06/20 00:00
Matrix: Water
Date Received: 11/07/20 10:00

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/16/20 23:12	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/16/20 23:12	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/16/20 23:12	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 23:12	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/16/20 23:12	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/16/20 23:12	1
2-Butanone	5.00	U	5.00		ug/L			11/16/20 23:12	1
2-Hexanone	5.00	U	5.00		ug/L			11/16/20 23:12	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/16/20 23:12	1
Acetone	5.00	U	5.00		ug/L			11/16/20 23:12	1
Benzene	0.200	U	0.200		ug/L			11/16/20 23:12	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/16/20 23:12	1
Bromoform	1.00	U	1.00		ug/L			11/16/20 23:12	1
Bromomethane	0.500	U	0.500		ug/L			11/16/20 23:12	1
Carbon disulfide	0.500	U	0.500		ug/L			11/16/20 23:12	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/16/20 23:12	1
Chlorobenzene	0.500	U	0.500		ug/L			11/16/20 23:12	1
Chloroethane	0.500	U	0.500		ug/L			11/16/20 23:12	1
Chloroform	0.200	U	0.200		ug/L			11/16/20 23:12	1
Chloromethane	0.500	U	0.500		ug/L			11/16/20 23:12	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 23:12	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/16/20 23:12	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/16/20 23:12	1
Ethylbenzene	0.500	U	0.500		ug/L			11/16/20 23:12	1
Freon 113	0.500	U	0.500		ug/L			11/16/20 23:12	1
m&p-Xylene	0.500	U	0.500		ug/L			11/16/20 23:12	1
Methylene Chloride	0.500	U	0.500		ug/L			11/16/20 23:12	1
o-Xylene	0.500	U	0.500		ug/L			11/16/20 23:12	1
Styrene	0.500	U	0.500		ug/L			11/16/20 23:12	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/16/20 23:12	1
Toluene	0.200	U	0.200		ug/L			11/16/20 23:12	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 23:12	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/16/20 23:12	1
Trichloroethene	0.200	U	0.200		ug/L			11/16/20 23:12	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/16/20 23:12	1
Vinyl acetate	0.500	U	0.500		ug/L			11/16/20 23:12	1
Vinyl chloride	0.200	U	0.200		ug/L			11/16/20 23:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*11/16/20 23:12*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*11/16/20 23:12*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/16/20 23:12*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*11/16/20 23:12*	*1*

Surrogate Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19950-1

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)
410-19950-1	E-6-1120	99	95	96	103
410-19950-1 - DL	E-6-1120	104	97	95	99
410-19950-2 - DL	E-7-1120	101	94	97	100
410-19950-2	E-7-1120	100	94	98	101
410-19950-2 - DL2	E-7-1120	104	106	97	97
410-19950-3	BOP-09i-1120	102	97	95	99
410-19950-3 - DL	BOP-09i-1120	103	98	96	99
410-19950-4	BOP-10i-1120	98	92	97	104
410-19950-4 - DL	BOP-10i-1120	102	96	95	102
410-19950-5	Trip Blanks	100	94	97	103
LCS 410-66620/5	Lab Control Sample	96	91	97	103
LCS 410-66620/7	Lab Control Sample	97	92	98	103
LCS 410-67216/5	Lab Control Sample	101	94	97	100
LCS 410-67216/7	Lab Control Sample	103	95	98	99
LCS 410-67486/5	Lab Control Sample	110	106	100	97
LCS 410-67486/6	Lab Control Sample	103	104	98	97
LCSD 410-66620/6	Lab Control Sample Dup	95	92	98	102
LCSD 410-66620/8	Lab Control Sample Dup	97	94	98	104
LCSD 410-67216/6	Lab Control Sample Dup	101	95	97	100
LCSD 410-67216/8	Lab Control Sample Dup	101	96	97	99
MB 410-66620/10	Method Blank	100	93	95	102
MB 410-67216/10	Method Blank	104	97	94	101
MB 410-67486/8	Method Blank	105	106	97	97

Surrogate Legend

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

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		Propene1
Lab Sample ID	Client Sample ID	(28-140)
410-19950-1	E-6-1120	85
410-19950-1 - DL	E-6-1120	96
410-19950-2	E-7-1120	2066 X
410-19950-2 - RA	E-7-1120	2188 X
410-19950-2 - DL	E-7-1120	100
410-19950-3	BOP-09i-1120	89
410-19950-3 - DL	BOP-09i-1120	98
410-19950-4	BOP-10i-1120	84
410-19950-4 - DL	BOP-10i-1120	99
LCS 410-64160/2-A	Lab Control Sample	102
LCS 410-64663/2-A	Lab Control Sample	101
LCSD 410-64160/3-A	Lab Control Sample Dup	97
MB 410-64160/1-A	Method Blank	100
MB 410-64663/1-A	Method Blank	104

Surrogate Summary

Client: Landau & Associates, Inc.
Job ID: 410-19950-1
Project/Site: Boeing of Portland 0025116.120.412

Surrogate Legend

Propene = Propene

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19950-1

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

Lab Sample ID: MB 410-66620/10
Matrix: Water
Analysis Batch: 66620

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			11/16/20 21:43	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/16/20 21:43	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/16/20 21:43	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 21:43	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/16/20 21:43	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/16/20 21:43	1
2-Butanone	5.00	U	5.00		ug/L			11/16/20 21:43	1
2-Hexanone	5.00	U	5.00		ug/L			11/16/20 21:43	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/16/20 21:43	1
Acetone	5.00	U	5.00		ug/L			11/16/20 21:43	1
Benzene	0.200	U	0.200		ug/L			11/16/20 21:43	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
Bromoform	1.00	U	1.00		ug/L			11/16/20 21:43	1
Bromomethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
Carbon disulfide	0.500	U	0.500		ug/L			11/16/20 21:43	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/16/20 21:43	1
Chlorobenzene	0.500	U	0.500		ug/L			11/16/20 21:43	1
Chloroethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
Chloroform	0.200	U	0.200		ug/L			11/16/20 21:43	1
Chloromethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 21:43	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/16/20 21:43	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
Ethylbenzene	0.500	U	0.500		ug/L			11/16/20 21:43	1
Freon 113	0.500	U	0.500		ug/L			11/16/20 21:43	1
m&p-Xylene	0.500	U	0.500		ug/L			11/16/20 21:43	1
Methylene Chloride	0.500	U	0.500		ug/L			11/16/20 21:43	1
o-Xylene	0.500	U	0.500		ug/L			11/16/20 21:43	1
Styrene	0.500	U	0.500		ug/L			11/16/20 21:43	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/16/20 21:43	1
Toluene	0.200	U	0.200		ug/L			11/16/20 21:43	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/16/20 21:43	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/16/20 21:43	1
Trichloroethene	0.200	U	0.200		ug/L			11/16/20 21:43	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/16/20 21:43	1
Vinyl acetate	0.500	U	0.500		ug/L			11/16/20 21:43	1
Vinyl chloride	0.200	U	0.200		ug/L			11/16/20 21:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*11/16/20 21:43*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*11/16/20 21:43*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*11/16/20 21:43*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/16/20 21:43*	*1*

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

Lab Sample ID: LCS 410-66620/5
Matrix: Water
Analysis Batch: 66620

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	4.196		ug/L		84	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.252		ug/L		105	75 - 123
1,1,2-Trichloroethane	5.00	4.892		ug/L		98	80 - 120
1,1-Dichloroethane	5.00	4.764		ug/L		95	74 - 120
1,1-Dichloroethene	5.00	4.988		ug/L		100	80 - 131
1,2-Dichloroethane	5.00	4.223		ug/L		84	69 - 122
1,2-Dichloropropane	5.00	5.077		ug/L		102	80 - 120
2-Butanone	37.5	34.85		ug/L		93	59 - 141
2-Hexanone	25.0	24.64		ug/L		99	52 - 140
4-Methyl-2-pentanone	25.0	24.53		ug/L		98	55 - 140
Acetone	37.5	30.04		ug/L		80	60 - 146
Benzene	5.00	4.897		ug/L		98	80 - 120
Bromodichloromethane	5.00	4.605		ug/L		92	73 - 124
Bromoform	5.00	4.314		ug/L		86	49 - 144
Bromomethane	5.00	4.212		ug/L		84	60 - 136
Carbon disulfide	5.00	5.002		ug/L		100	67 - 130
Carbon tetrachloride	5.00	4.120		ug/L		82	64 - 141
Chlorobenzene	5.00	4.787		ug/L		96	80 - 120
Chloroethane	5.00	4.645		ug/L		93	63 - 120
Chloroform	5.00	4.559		ug/L		91	80 - 120
Chloromethane	5.00	4.101		ug/L		82	56 - 124
cis-1,2-Dichloroethene	5.00	5.078		ug/L		102	80 - 122
cis-1,3-Dichloropropene	5.00	4.738		ug/L		95	67 - 121
Dibromochloromethane	5.00	4.668		ug/L		93	64 - 138
Ethylbenzene	5.00	4.707		ug/L		94	80 - 120
Freon 113	5.00	4.665		ug/L		93	75 - 133
m&p-Xylene	10.0	9.792		ug/L		98	80 - 120
Methylene Chloride	5.00	5.055		ug/L		101	80 - 120
o-Xylene	5.00	4.852		ug/L		97	80 - 120
Styrene	5.00	4.925		ug/L		98	80 - 120
Tetrachloroethene	5.00	4.668		ug/L		93	80 - 120
Toluene	5.00	4.974		ug/L		99	80 - 120
trans-1,2-Dichloroethene	5.00	4.912		ug/L		98	80 - 122
trans-1,3-Dichloropropene	5.00	4.657		ug/L		93	61 - 129
Trichloroethene	5.00	4.581		ug/L		92	80 - 120
Trichlorofluoromethane	5.00	4.209		ug/L		84	62 - 136
Vinyl chloride	5.00	4.504		ug/L		90	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*
Dibromofluoromethane (Surr)	*91*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

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

Lab Sample ID: LCS 410-66620/7
Matrix: Water
Analysis Batch: 66620

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	11.29		ug/L		90	38 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 410-66620/6
Matrix: Water
Analysis Batch: 66620

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	4.206		ug/L		84	78 - 126	0	30
1,1,2,2-Tetrachloroethane			5.00	5.155		ug/L		103	75 - 123	2	30
1,1,2-Trichloroethane			5.00	4.910		ug/L		98	80 - 120	0	30
1,1-Dichloroethane			5.00	4.755		ug/L		95	74 - 120	0	30
1,1-Dichloroethene			5.00	4.995		ug/L		100	80 - 131	0	30
1,2-Dichloroethane			5.00	4.127		ug/L		83	69 - 122	2	30
1,2-Dichloropropane			5.00	5.055		ug/L		101	80 - 120	0	30
2-Butanone			37.5	37.58		ug/L		100	59 - 141	8	30
2-Hexanone			25.0	26.83		ug/L		107	52 - 140	9	30
4-Methyl-2-pentanone			25.0	25.79		ug/L		103	55 - 140	5	30
Acetone			37.5	31.34		ug/L		84	60 - 146	4	30
Benzene			5.00	4.863		ug/L		97	80 - 120	1	30
Bromodichloromethane			5.00	4.541		ug/L		91	73 - 124	1	30
Bromoform			5.00	4.138		ug/L		83	49 - 144	4	30
Bromomethane			5.00	4.203		ug/L		84	60 - 136	0	30
Carbon disulfide			5.00	5.012		ug/L		100	67 - 130	0	30
Carbon tetrachloride			5.00	4.037		ug/L		81	64 - 141	2	30
Chlorobenzene			5.00	4.742		ug/L		95	80 - 120	1	30
Chloroethane			5.00	4.544		ug/L		91	63 - 120	2	30
Chloroform			5.00	4.520		ug/L		90	80 - 120	1	30
Chloromethane			5.00	4.101		ug/L		82	56 - 124	0	30
cis-1,2-Dichloroethene			5.00	4.982		ug/L		100	80 - 122	2	30
cis-1,3-Dichloropropene			5.00	4.686		ug/L		94	67 - 121	1	30
Dibromochloromethane			5.00	4.674		ug/L		93	64 - 138	0	30
Ethylbenzene			5.00	4.753		ug/L		95	80 - 120	1	30
Freon 113			5.00	4.588		ug/L		92	75 - 133	2	30
m&p-Xylene			10.0	9.864		ug/L		99	80 - 120	1	30
Methylene Chloride			5.00	4.953		ug/L		99	80 - 120	2	30
o-Xylene			5.00	4.879		ug/L		98	80 - 120	1	30
Styrene			5.00	5.024		ug/L		100	80 - 120	2	30
Tetrachloroethene			5.00	4.622		ug/L		92	80 - 120	1	30
Toluene			5.00	5.039		ug/L		101	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	4.943		ug/L		99	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	4.661		ug/L		93	61 - 129	0	30
Trichloroethene			5.00	4.680		ug/L		94	80 - 120	2	30

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

Lab Sample ID: LCSD 410-66620/6
Matrix: Water
Analysis Batch: 66620

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	4.191		ug/L		84	62 - 136	0	30
Vinyl chloride			5.00	4.452		ug/L		89	60 - 125	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-66620/8
Matrix: Water
Analysis Batch: 66620

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	11.31		ug/L		90	38 - 145	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: MB 410-67216/10
Matrix: Water
Analysis Batch: 67216

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			11/18/20 00:26	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/18/20 00:26	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/18/20 00:26	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/18/20 00:26	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/18/20 00:26	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/18/20 00:26	1
2-Butanone	5.00	U	5.00		ug/L			11/18/20 00:26	1
2-Hexanone	5.00	U	5.00		ug/L			11/18/20 00:26	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/18/20 00:26	1
Acetone	5.00	U	5.00		ug/L			11/18/20 00:26	1
Benzene	0.200	U	0.200		ug/L			11/18/20 00:26	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
Bromoform	1.00	U	1.00		ug/L			11/18/20 00:26	1
Bromomethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
Carbon disulfide	0.500	U	0.500		ug/L			11/18/20 00:26	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/18/20 00:26	1
Chlorobenzene	0.500	U	0.500		ug/L			11/18/20 00:26	1
Chloroethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
Chloroform	0.200	U	0.200		ug/L			11/18/20 00:26	1
Chloromethane	0.500	U	0.500		ug/L			11/18/20 00:26	1

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

Lab Sample ID: MB 410-67216/10
Matrix: Water
Analysis Batch: 67216

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			11/18/20 00:26	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/18/20 00:26	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
Ethylbenzene	0.500	U	0.500		ug/L			11/18/20 00:26	1
Freon 113	0.500	U	0.500		ug/L			11/18/20 00:26	1
m&p-Xylene	0.500	U	0.500		ug/L			11/18/20 00:26	1
Methylene Chloride	0.500	U	0.500		ug/L			11/18/20 00:26	1
o-Xylene	0.500	U	0.500		ug/L			11/18/20 00:26	1
Styrene	0.500	U	0.500		ug/L			11/18/20 00:26	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/18/20 00:26	1
Toluene	0.200	U	0.200		ug/L			11/18/20 00:26	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/18/20 00:26	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/18/20 00:26	1
Trichloroethene	0.200	U	0.200		ug/L			11/18/20 00:26	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/18/20 00:26	1
Vinyl acetate	0.500	U	0.500		ug/L			11/18/20 00:26	1
Vinyl chloride	0.200	U	0.200		ug/L			11/18/20 00:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*11/18/20 00:26*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*11/18/20 00:26*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*11/18/20 00:26*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/18/20 00:26*	*1*

Lab Sample ID: LCS 410-67216/5
Matrix: Water
Analysis Batch: 67216

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	4.443		ug/L		89	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.489		ug/L		110	75 - 123
1,1,2-Trichloroethane	5.00	5.607		ug/L		112	80 - 120
1,1-Dichloroethane	5.00	5.306		ug/L		106	74 - 120
1,1-Dichloroethene	5.00	5.051		ug/L		101	80 - 131
1,2-Dichloroethane	5.00	4.871		ug/L		97	69 - 122
1,2-Dichloropropane	5.00	5.483		ug/L		110	80 - 120
2-Butanone	37.5	41.52		ug/L		111	59 - 141
2-Hexanone	25.0	25.98		ug/L		104	52 - 140
4-Methyl-2-pentanone	25.0	25.49		ug/L		102	55 - 140
Acetone	37.5	36.89		ug/L		98	60 - 146
Benzene	5.00	5.147		ug/L		103	80 - 120
Bromodichloromethane	5.00	4.959		ug/L		99	73 - 124
Bromoform	5.00	4.737		ug/L		95	49 - 144
Bromomethane	5.00	3.348		ug/L		67	60 - 136
Carbon disulfide	5.00	5.272		ug/L		105	67 - 130
Carbon tetrachloride	5.00	4.433		ug/L		89	64 - 141
Chlorobenzene	5.00	5.024		ug/L		100	80 - 120
Chloroethane	5.00	3.559		ug/L		71	63 - 120

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

Lab Sample ID: LCS 410-67216/5
Matrix: Water
Analysis Batch: 67216

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	4.919		ug/L		98	80 - 120
Chloromethane	5.00	3.538		ug/L		71	56 - 124
cis-1,2-Dichloroethene	5.00	5.162		ug/L		103	80 - 122
cis-1,3-Dichloropropene	5.00	4.842		ug/L		97	67 - 121
Dibromochloromethane	5.00	5.108		ug/L		102	64 - 138
Ethylbenzene	5.00	5.077		ug/L		102	80 - 120
Freon 113	5.00	4.967		ug/L		99	75 - 133
m&p-Xylene	10.0	9.771		ug/L		98	80 - 120
Methylene Chloride	5.00	5.300		ug/L		106	80 - 120
o-Xylene	5.00	4.749		ug/L		95	80 - 120
Styrene	5.00	4.970		ug/L		99	80 - 120
Tetrachloroethene	5.00	5.008		ug/L		100	80 - 120
Toluene	5.00	4.984		ug/L		100	80 - 120
trans-1,2-Dichloroethene	5.00	4.924		ug/L		98	80 - 122
trans-1,3-Dichloropropene	5.00	5.021		ug/L		100	61 - 129
Trichloroethene	5.00	4.795		ug/L		96	80 - 120
Trichlorofluoromethane	5.00	3.891		ug/L		78	62 - 136
Vinyl chloride	5.00	3.580		ug/L		72	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 410-67216/7
Matrix: Water
Analysis Batch: 67216

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	14.65		ug/L		117	38 - 145

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 410-67216/6
Matrix: Water
Analysis Batch: 67216

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	4.434		ug/L		89	78 - 126	0	30
1,1,2,2-Tetrachloroethane	5.00	5.508		ug/L		110	75 - 123	0	30
1,1,2-Trichloroethane	5.00	5.541		ug/L		111	80 - 120	1	30
1,1-Dichloroethane	5.00	5.254		ug/L		105	74 - 120	1	30
1,1-Dichloroethene	5.00	5.050		ug/L		101	80 - 131	0	30

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

Lab Sample ID: LCSD 410-67216/6
Matrix: Water
Analysis Batch: 67216

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	4.765		ug/L		95	69 - 122	2	30
1,2-Dichloropropane			5.00	5.475		ug/L		109	80 - 120	0	30
2-Butanone			37.5	40.55		ug/L		108	59 - 141	2	30
2-Hexanone			25.0	25.90		ug/L		104	52 - 140	0	30
4-Methyl-2-pentanone			25.0	25.41		ug/L		102	55 - 140	0	30
Acetone			37.5	37.42		ug/L		100	60 - 146	1	30
Benzene			5.00	5.096		ug/L		102	80 - 120	1	30
Bromodichloromethane			5.00	4.990		ug/L		100	73 - 124	1	30
Bromoform			5.00	4.662		ug/L		93	49 - 144	2	30
Bromomethane			5.00	3.293		ug/L		66	60 - 136	2	30
Carbon disulfide			5.00	5.249		ug/L		105	67 - 130	0	30
Carbon tetrachloride			5.00	4.414		ug/L		88	64 - 141	0	30
Chlorobenzene			5.00	4.995		ug/L		100	80 - 120	1	30
Chloroethane			5.00	3.496		ug/L		70	63 - 120	2	30
Chloroform			5.00	4.900		ug/L		98	80 - 120	0	30
Chloromethane			5.00	3.617		ug/L		72	56 - 124	2	30
cis-1,2-Dichloroethene			5.00	5.115		ug/L		102	80 - 122	1	30
cis-1,3-Dichloropropene			5.00	4.813		ug/L		96	67 - 121	1	30
Dibromochloromethane			5.00	5.133		ug/L		103	64 - 138	0	30
Ethylbenzene			5.00	5.020		ug/L		100	80 - 120	1	30
Freon 113			5.00	4.854		ug/L		97	75 - 133	2	30
m&p-Xylene			10.0	9.826		ug/L		98	80 - 120	1	30
Methylene Chloride			5.00	5.317		ug/L		106	80 - 120	0	30
o-Xylene			5.00	4.722		ug/L		94	80 - 120	1	30
Styrene			5.00	4.972		ug/L		99	80 - 120	0	30
Tetrachloroethene			5.00	5.068		ug/L		101	80 - 120	1	30
Toluene			5.00	5.010		ug/L		100	80 - 120	1	30
trans-1,2-Dichloroethene			5.00	4.891		ug/L		98	80 - 122	1	30
trans-1,3-Dichloropropene			5.00	5.051		ug/L		101	61 - 129	1	30
Trichloroethene			5.00	4.742		ug/L		95	80 - 120	1	30
Trichlorofluoromethane			5.00	3.818		ug/L		76	62 - 136	2	30
Vinyl chloride			5.00	3.566		ug/L		71	60 - 125	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-67216/8
Matrix: Water
Analysis Batch: 67216

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	15.60		ug/L		125	38 - 145	6	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*

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

Lab Sample ID: LCSD 410-67216/8
Matrix: Water
Analysis Batch: 67216

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

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: MB 410-67486/8
Matrix: Water
Analysis Batch: 67486

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			11/18/20 12:19	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			11/18/20 12:19	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			11/18/20 12:19	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			11/18/20 12:19	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			11/18/20 12:19	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			11/18/20 12:19	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			11/18/20 12:19	1
2-Butanone	5.00	U	5.00		ug/L			11/18/20 12:19	1
2-Hexanone	5.00	U	5.00		ug/L			11/18/20 12:19	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			11/18/20 12:19	1
Acetone	5.00	U	5.00		ug/L			11/18/20 12:19	1
Benzene	0.200	U	0.200		ug/L			11/18/20 12:19	1
Bromodichloromethane	0.500	U	0.500		ug/L			11/18/20 12:19	1
Bromoform	1.00	U	1.00		ug/L			11/18/20 12:19	1
Bromomethane	0.500	U	0.500		ug/L			11/18/20 12:19	1
Carbon disulfide	0.500	U	0.500		ug/L			11/18/20 12:19	1
Carbon tetrachloride	0.200	U	0.200		ug/L			11/18/20 12:19	1
Chlorobenzene	0.500	U	0.500		ug/L			11/18/20 12:19	1
Chloroethane	0.500	U	0.500		ug/L			11/18/20 12:19	1
Chloroform	0.200	U	0.200		ug/L			11/18/20 12:19	1
Chloromethane	0.500	U	0.500		ug/L			11/18/20 12:19	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/18/20 12:19	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/18/20 12:19	1
Dibromochloromethane	0.500	U	0.500		ug/L			11/18/20 12:19	1
Ethylbenzene	0.500	U	0.500		ug/L			11/18/20 12:19	1
Freon 113	0.500	U	0.500		ug/L			11/18/20 12:19	1
m&p-Xylene	0.500	U	0.500		ug/L			11/18/20 12:19	1
Methylene Chloride	0.500	U	0.500		ug/L			11/18/20 12:19	1
o-Xylene	0.500	U	0.500		ug/L			11/18/20 12:19	1
Styrene	0.500	U	0.500		ug/L			11/18/20 12:19	1
Tetrachloroethene	0.200	U	0.200		ug/L			11/18/20 12:19	1
Toluene	0.200	U	0.200		ug/L			11/18/20 12:19	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			11/18/20 12:19	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			11/18/20 12:19	1
Trichloroethene	0.200	U	0.200		ug/L			11/18/20 12:19	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			11/18/20 12:19	1
Vinyl acetate	0.500	U	0.500		ug/L			11/18/20 12:19	1
Vinyl chloride	0.200	U	0.200		ug/L			11/18/20 12:19	1

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

Lab Sample ID: MB 410-67486/8
Matrix: Water
Analysis Batch: 67486

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		11/18/20 12:19	1
Dibromofluoromethane (Surr)	106		80 - 120		11/18/20 12:19	1
4-Bromofluorobenzene (Surr)	97		80 - 120		11/18/20 12:19	1
Toluene-d8 (Surr)	97		80 - 120		11/18/20 12:19	1

Lab Sample ID: LCS 410-67486/5
Matrix: Water
Analysis Batch: 67486

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	4.913		ug/L		98	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.384		ug/L		108	75 - 123
1,1,2-Trichloroethane	5.00	5.515		ug/L		110	80 - 120
1,1-Dichloroethane	5.00	5.271		ug/L		105	74 - 120
1,1-Dichloroethene	5.00	4.984		ug/L		100	80 - 131
1,2-Dichloroethane	5.00	5.659		ug/L		113	69 - 122
1,2-Dichloropropane	5.00	5.565		ug/L		111	80 - 120
2-Butanone	37.5	35.53		ug/L		95	59 - 141
2-Hexanone	25.0	22.55		ug/L		90	52 - 140
4-Methyl-2-pentanone	25.0	22.30		ug/L		89	55 - 140
Acetone	37.5	36.58		ug/L		98	60 - 146
Benzene	5.00	5.060		ug/L		101	80 - 120
Bromodichloromethane	5.00	5.367		ug/L		107	73 - 124
Bromoform	5.00	5.187		ug/L		104	49 - 144
Bromomethane	5.00	5.050		ug/L		101	60 - 136
Carbon disulfide	5.00	5.127		ug/L		103	67 - 130
Carbon tetrachloride	5.00	4.909		ug/L		98	64 - 141
Chlorobenzene	5.00	4.833		ug/L		97	80 - 120
Chloroethane	5.00	5.028		ug/L		101	63 - 120
Chloroform	5.00	5.231		ug/L		105	80 - 120
Chloromethane	5.00	5.098		ug/L		102	56 - 124
cis-1,2-Dichloroethene	5.00	5.368		ug/L		107	80 - 122
cis-1,3-Dichloropropene	5.00	5.004		ug/L		100	67 - 121
Dibromochloromethane	5.00	5.260		ug/L		105	64 - 138
Ethylbenzene	5.00	4.635		ug/L		93	80 - 120
Freon 113	5.00	4.528		ug/L		91	75 - 133
m&p-Xylene	10.0	9.323		ug/L		93	80 - 120
Methylene Chloride	5.00	5.472		ug/L		109	80 - 120
o-Xylene	5.00	4.632		ug/L		93	80 - 120
Styrene	5.00	4.780		ug/L		96	80 - 120
Tetrachloroethene	5.00	4.803		ug/L		96	80 - 120
Toluene	5.00	4.715		ug/L		94	80 - 120
trans-1,2-Dichloroethene	5.00	5.043		ug/L		101	80 - 122
trans-1,3-Dichloropropene	5.00	4.818		ug/L		96	61 - 129
Trichloroethene	5.00	4.986		ug/L		100	80 - 120
Trichlorofluoromethane	5.00	4.845		ug/L		97	62 - 136
Vinyl chloride	5.00	5.191		ug/L		104	60 - 125

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

Lab Sample ID: LCS 410-67486/5
Matrix: Water
Analysis Batch: 67486

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*110*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

Lab Sample ID: LCS 410-67486/6
Matrix: Water
Analysis Batch: 67486

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	13.54		ug/L		108	38 - 145		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-64160/1-A
Matrix: Water
Analysis Batch: 64175

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 64160

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/10/20 09:09	11/10/20 17:27	1
Ethane (1C)	5.00	U	5.00		ug/L		11/10/20 09:09	11/10/20 17:27	1
Ethene (1C)	5.00	U	5.00		ug/L		11/10/20 09:09	11/10/20 17:27	1
Methane (1C)	5.00	U	5.00		ug/L		11/10/20 09:09	11/10/20 17:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	*100*		*28 - 140*	*11/10/20 09:09*	*11/10/20 17:27*	*1*

Lab Sample ID: LCS 410-64160/2-A
Matrix: Water
Analysis Batch: 64175

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64160

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acetylene (1C)			51.2	56.84		ug/L		111	57 - 146		
Ethane (1C)			59.4	60.24		ug/L		101	85 - 115		
Ethene (1C)			60.4	61.25		ug/L		101	83 - 115		
Methane (1C)			59.4	62.89		ug/L		106	85 - 115		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Propene (1C)	*102*		*28 - 140*

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 410-64160/3-A
Matrix: Water
Analysis Batch: 64175

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 64160

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetylene (1C)			51.2	53.49		ug/L		104	57 - 146	6	20
Ethane (1C)			59.4	57.48		ug/L		97	85 - 115	5	20
Ethene (1C)			60.4	58.43		ug/L		97	83 - 115	5	20
Methane (1C)			59.4	59.48		ug/L		100	85 - 115	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*97*		*28 - 140*

Lab Sample ID: MB 410-64663/1-A
Matrix: Water
Analysis Batch: 64679

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 64663

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acetylene (1C)	5.00	U	5.00		ug/L		11/11/20 09:10	11/11/20 09:28	1
Ethane (1C)	5.00	U	5.00		ug/L		11/11/20 09:10	11/11/20 09:28	1
Ethene (1C)	5.00	U	5.00		ug/L		11/11/20 09:10	11/11/20 09:28	1
Methane (1C)	5.00	U	5.00		ug/L		11/11/20 09:10	11/11/20 09:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*104*		*28 - 140*	*11/11/20 09:10*	*11/11/20 09:28*	*1*

Lab Sample ID: LCS 410-64663/2-A
Matrix: Water
Analysis Batch: 64679

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64663

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetylene (1C)			51.2	55.26		ug/L		108	57 - 146
Ethane (1C)			59.4	59.25		ug/L		100	85 - 115
Ethene (1C)			60.4	60.32		ug/L		100	83 - 115
Methane (1C)			59.4	60.79		ug/L		102	85 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*101*		*28 - 140*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-69527/4
Matrix: Water
Analysis Batch: 69527

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/23/20 19:09	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 410-69527/3
Matrix: Water
Analysis Batch: 69527

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.438		mg/L		99	90 - 110		

Lab Sample ID: MB 410-70016/4
Matrix: Water
Analysis Batch: 70016

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/24/20 15:18	1

Lab Sample ID: LCS 410-70016/3
Matrix: Water
Analysis Batch: 70016

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.348		mg/L		98	90 - 110		

Lab Sample ID: MB 410-70097/23
Matrix: Water
Analysis Batch: 70097

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/25/20 02:58	1

Lab Sample ID: LCS 410-70097/22
Matrix: Water
Analysis Batch: 70097

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.428		mg/L		99	90 - 110		

Lab Sample ID: 410-19950-3 MS
Matrix: Water
Analysis Batch: 70097

Client Sample ID: BOP-09i-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	2.52		5.00	7.587		mg/L		101	90 - 110		

Lab Sample ID: 410-19950-3 DU
Matrix: Water
Analysis Batch: 70097

Client Sample ID: BOP-09i-1120
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Sulfate	2.52			2.477		mg/L				2	15

Lab Sample ID: MB 410-70379/4
Matrix: Water
Analysis Batch: 70379

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.00	U	1.00		mg/L			11/25/20 11:10	1

Client: Landau & Associates, Inc.
Job ID: 410-19950-1
Project/Site: Boeing of Portland 0025116.120.412

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: LCS 410-70379/3
Matrix: Water
Analysis Batch: 70379

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.420		mg/L		99	90 - 110

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-70930/37
Matrix: Water
Analysis Batch: 70930

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			11/26/20 06:01	1

Lab Sample ID: LCS 410-70930/36
Matrix: Water
Analysis Batch: 70930

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	25.39		mg/L		102	91 - 113

Lab Sample ID: MB 410-71617/67
Matrix: Water
Analysis Batch: 71617

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			12/01/20 11:02	1

Lab Sample ID: LCS 410-71617/66
Matrix: Water
Analysis Batch: 71617

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	24.45		mg/L		98	91 - 113

GC/MS VOA

Analysis Batch: 66620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19950-1	E-6-1120	Total/NA	Water	8260C LL	
410-19950-4	BOP-10i-1120	Total/NA	Water	8260C LL	
410-19950-5	Trip Blanks	Total/NA	Water	8260C LL	
MB 410-66620/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-66620/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-66620/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-66620/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-66620/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Analysis Batch: 67216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19950-1 - DL	E-6-1120	Total/NA	Water	8260C LL	
410-19950-2 - DL	E-7-1120	Total/NA	Water	8260C LL	
410-19950-2	E-7-1120	Total/NA	Water	8260C LL	
410-19950-3	BOP-09i-1120	Total/NA	Water	8260C LL	
410-19950-3 - DL	BOP-09i-1120	Total/NA	Water	8260C LL	
410-19950-4 - DL	BOP-10i-1120	Total/NA	Water	8260C LL	
MB 410-67216/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-67216/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-67216/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-67216/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-67216/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Analysis Batch: 67486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19950-2 - DL2	E-7-1120	Total/NA	Water	8260C LL	
MB 410-67486/8	Method Blank	Total/NA	Water	8260C LL	
LCS 410-67486/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-67486/6	Lab Control Sample	Total/NA	Water	8260C LL	

GC VOA

Prep Batch: 64160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19950-1	E-6-1120	Total/NA	Water	RSK-175	
410-19950-2	E-7-1120	Total/NA	Water	RSK-175	
410-19950-3	BOP-09i-1120	Total/NA	Water	RSK-175	
410-19950-4	BOP-10i-1120	Total/NA	Water	RSK-175	
MB 410-64160/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-64160/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-64160/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 64175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19950-1	E-6-1120	Total/NA	Water	RSK-175	64160
410-19950-2	E-7-1120	Total/NA	Water	RSK-175	64160
410-19950-3	BOP-09i-1120	Total/NA	Water	RSK-175	64160
410-19950-4	BOP-10i-1120	Total/NA	Water	RSK-175	64160
MB 410-64160/1-A	Method Blank	Total/NA	Water	RSK-175	64160
LCS 410-64160/2-A	Lab Control Sample	Total/NA	Water	RSK-175	64160
LCSD 410-64160/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	64160

GC VOA

Prep Batch: 64663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19950-1 - DL	E-6-1120	Total/NA	Water	RSK-175	
410-19950-2 - RA	E-7-1120	Total/NA	Water	RSK-175	
410-19950-2 - DL	E-7-1120	Total/NA	Water	RSK-175	
410-19950-3 - DL	BOP-09i-1120	Total/NA	Water	RSK-175	
410-19950-4 - DL	BOP-10i-1120	Total/NA	Water	RSK-175	
MB 410-64663/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-64663/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 64679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19950-1 - DL	E-6-1120	Total/NA	Water	RSK-175	64663
410-19950-2 - RA	E-7-1120	Total/NA	Water	RSK-175	64663
410-19950-2 - DL	E-7-1120	Total/NA	Water	RSK-175	64663
410-19950-3 - DL	BOP-09i-1120	Total/NA	Water	RSK-175	64663
410-19950-4 - DL	BOP-10i-1120	Total/NA	Water	RSK-175	64663
MB 410-64663/1-A	Method Blank	Total/NA	Water	RSK-175	64663
LCS 410-64663/2-A	Lab Control Sample	Total/NA	Water	RSK-175	64663

HPLC/IC

Analysis Batch: 69527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19950-2	E-7-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-69527/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-69527/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 70016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19950-1	E-6-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-70016/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-70016/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 70097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19950-3	BOP-09i-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-70097/23	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-70097/22	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-19950-3 MS	BOP-09i-1120	Total/NA	Water	EPA 300.0 R2.1	
410-19950-3 DU	BOP-09i-1120	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 70379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19950-4	BOP-10i-1120	Total/NA	Water	EPA 300.0 R2.1	
MB 410-70379/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-70379/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

General Chemistry

Analysis Batch: 70930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19950-2	E-7-1120	Total/NA	Water	5310C-2011	
410-19950-3	BOP-09i-1120	Total/NA	Water	5310C-2011	

General Chemistry (Continued)

Analysis Batch: 70930 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19950-4	BOP-10i-1120	Total/NA	Water	5310C-2011	
MB 410-70930/37	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-70930/36	Lab Control Sample	Total/NA	Water	5310C-2011	

Analysis Batch: 71617

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-19950-1	E-6-1120	Total/NA	Water	5310C-2011	
MB 410-71617/67	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-71617/66	Lab Control Sample	Total/NA	Water	5310C-2011	

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19950-1

Client Sample ID: E-6-1120

Lab Sample ID: 410-19950-1

Date Collected: 11/06/20 10:34

Matrix: Water

Date Received: 11/07/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	66620	11/17/20 01:02	K4WN	ELLE
Total/NA	Analysis	8260C LL	DL	10	67216	11/18/20 02:12	UCB5	ELLE
Total/NA	Prep	RSK-175			64160	11/10/20 09:09	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	64175	11/10/20 19:38	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		64663	11/11/20 09:10	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	10	64679	11/11/20 15:44	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	70016	11/25/20 01:01	GJ35	ELLE
Total/NA	Analysis	5310C-2011		1	71617	12/01/20 13:51	NKL9	ELLE

Client Sample ID: E-7-1120

Lab Sample ID: 410-19950-2

Date Collected: 11/06/20 11:23

Matrix: Water

Date Received: 11/07/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL	DL2	200	67486	11/18/20 19:34	LCW8	ELLE
Total/NA	Analysis	8260C LL	DL	10	67216	11/18/20 04:41	UCB5	ELLE
Total/NA	Analysis	8260C LL		1	67216	11/18/20 05:03	UCB5	ELLE
Total/NA	Prep	RSK-175			64160	11/10/20 09:09	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	64175	11/10/20 19:56	LXF2	ELLE
Total/NA	Prep	RSK-175	RA		64663	11/11/20 09:10	LXF2	ELLE
Total/NA	Analysis	RSK-175	RA	1	64679	11/11/20 16:03	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		64663	11/11/20 09:10	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	100	64679	11/11/20 16:22	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		500	69527	11/23/20 22:50	GJ35	ELLE
Total/NA	Analysis	5310C-2011		500	70930	11/26/20 08:20	NKL9	ELLE

Client Sample ID: BOP-09i-1120

Lab Sample ID: 410-19950-3

Date Collected: 11/06/20 09:23

Matrix: Water

Date Received: 11/07/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		2	67216	11/18/20 05:45	UCB5	ELLE
Total/NA	Analysis	8260C LL	DL	20	67216	11/18/20 06:06	UCB5	ELLE
Total/NA	Prep	RSK-175			64160	11/10/20 09:09	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	64175	11/10/20 20:33	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		64663	11/11/20 09:11	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	200	64679	11/11/20 16:40	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	70097	11/25/20 03:15	GJ35	ELLE
Total/NA	Analysis	5310C-2011		25	70930	11/26/20 08:34	NKL9	ELLE

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Boeing of Portland 0025116.120.412

Job ID: 410-19950-1

Client Sample ID: BOP-10i-1120

Date Collected: 11/06/20 12:35
Date Received: 11/07/20 10:00

Lab Sample ID: 410-19950-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	66620	11/17/20 01:24	K4WN	ELLE
Total/NA	Analysis	8260C LL	DL	10	67216	11/18/20 02:33	UCB5	ELLE
Total/NA	Prep	RSK-175			64160	11/10/20 09:09	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	64175	11/10/20 20:51	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		64663	11/11/20 09:13	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	200	64679	11/11/20 16:59	LXF2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	70379	11/25/20 21:41	W5UX	ELLE
Total/NA	Analysis	5310C-2011		500	70930	11/26/20 08:48	NKL9	ELLE

Client Sample ID: Trip Blanks

Date Collected: 11/06/20 00:00
Date Received: 11/07/20 10:00

Lab Sample ID: 410-19950-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C LL		1	66620	11/16/20 23:12	K4WN	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: 410-19950-1
Project/Site: Boeing of Portland 0025116.120.412

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 0025116.120.412

Job ID: 410-19950-1

Method	Method Description	Protocol	Laboratory
8260C LL	Volatile Organic Compounds by GC/MS	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
5030C	Purge and Trap	SW846	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

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: 410-19950-1
Project/Site: Boeing of Portland 0025116.120.412

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-19950-1	E-6-1120	Water	11/06/20 10:34	11/07/20 10:00	
410-19950-2	E-7-1120	Water	11/06/20 11:23	11/07/20 10:00	
410-19950-3	BOP-09i-1120	Water	11/06/20 09:23	11/07/20 10:00	
410-19950-4	BOP-10i-1120	Water	11/06/20 12:35	11/07/20 10:00	
410-19950-5	Trip Blanks	Water	11/06/20 00:00	11/07/20 10:00	

Boeing Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # ____

410-19950 Chain of Custody

ironmental use only
_____
correspond.

1 Client Information

Site Location: Gresham Oregon
Site Project: Boeing of Portland
Site Program/#: 0025116.120.412
Boeing PM: Debbie Taege
Consultant Contact: Evelyna Ives
Report To: Above
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: WHL/GJN # of Coolers: 1

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	4 VOC (38 list)	TOC	Sulfate	~~Nitrate~~	AMEE -WHL	~~FPH-Dx~~ -WHL					5 Remarks/Comments
E-6-1120	11/6/20	10:34	H_2O	9	X	X	X		X						
E-7-1120	↓	11:23	↓	9	X	X	X		X						
BOP-09;-1120		9:23		9	X	X	X		X						
BOP-10;-1120		12:35		9	X	X	X		X						
~~LAI-8-1120~~				~~9~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~ -WHL					
Trip Blanks	—	—	↓	2											Shared TBs in cooler

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
[signature]	11/9/20 1510		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: [signature]	Date/Time 11/9/20 1600

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

Temperature upon Receipt: -0.7 °C

Custody Seals Intact?: Yes No

7

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 410-19950-1

Login Number: 19950
List Number: 1
Creator: Rivera, Tatiana

List Source: Eurofins Lancaster Laboratories Env

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.	N/A	
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.	True	
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	