REPORT

Compliance Monitoring Report
September 2023 Groundwater Sampling

Landsburg Mine Site

Submitted to:

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Submitted by:

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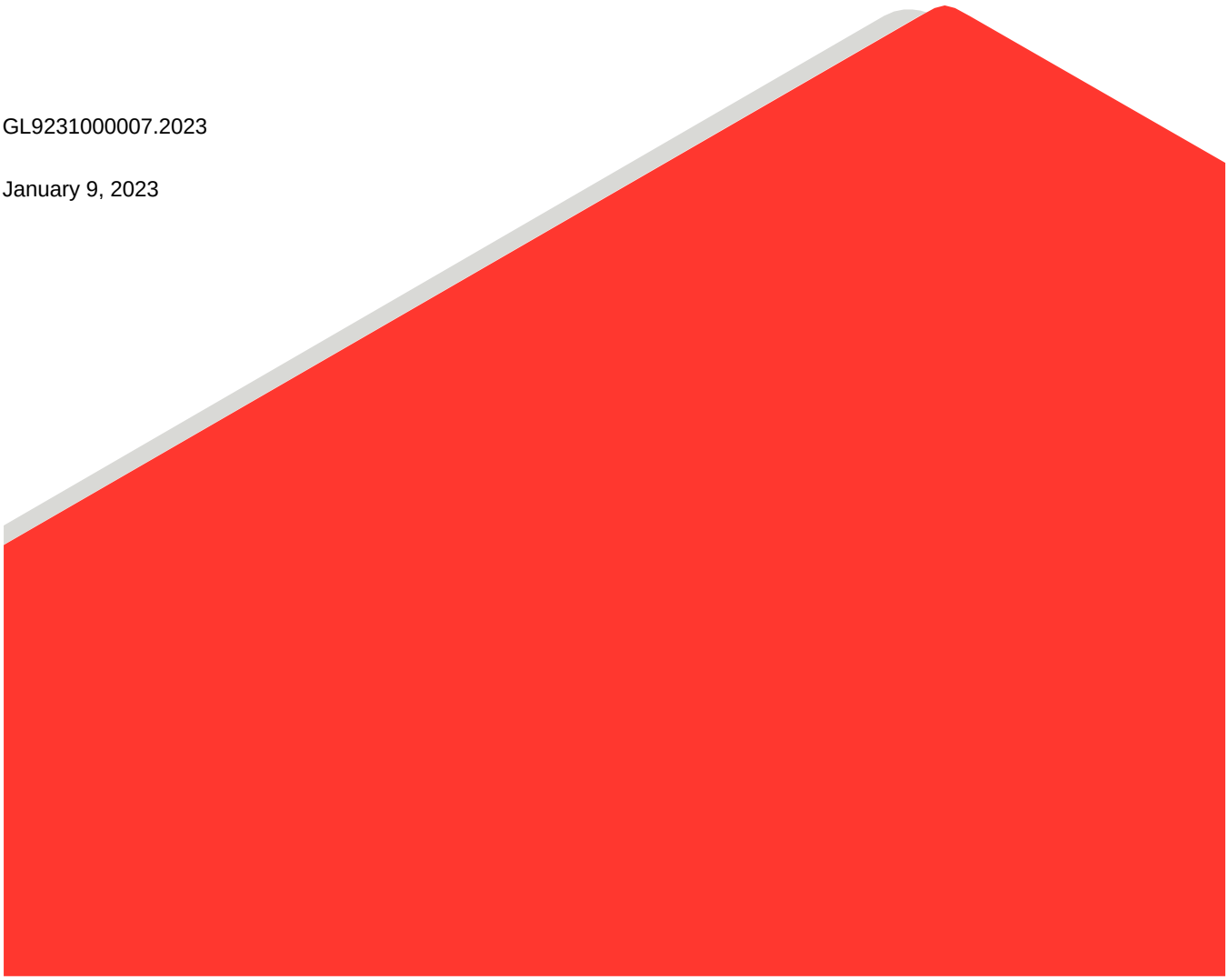

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Distribution List

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1.0 INTRODUCTION

The Compliance Monitoring Plan (CMP) (Ecology 2017) describes the long-term confirmational monitoring required after remediation actions are completed at the Landsburg Mine Site (the Site). Additional groundwater monitoring requirements are specified in the Amendment to the Cleanup Action Plan (CAP) (Ecology 2021). In accordance with the CMP and Amendment to the CAP, Site groundwater monitoring wells are currently sampled semi-annually. Well LMW-4 is sampled two additional times per year to provide quarterly sample results for 1,4-dioxane analysis (conducted concurrently with semi-annual sampling for 1,4-dioxane at three groundwater monitoring wells located north of the site [LMW-20, LMW-21, and LMW-22]). This report presents results of the September 2023 confirmational monitoring event, which is the second semi-annual sampling event completed in 2023.

The semi-annual event was conducted on September 26, 27, and 28, 2023, and included collecting groundwater samples from monitoring wells LMW-2, LMW-3, LMW-4, LMW-5, LMW-6, LMW-7, LMW-8, LMW-9, LMW-10, LMW-11, LMW-12, LMW-13R, LMW-14, and LMW-15.

Figure 1 presents the locations of the monitoring wells. Figure 2 presents a cross-section along the strike at the coal seam that also depicts the location of the monitoring wells. Monitoring wells LMW-2, LMW-4, LMW-10, LMW-12, and LMW-13R are completed to monitor shallow, middle, and deeper zones within the north end of the Rogers Coal Mine subsidence trench. Monitoring wells LMW-3, LMW-5, LMW-8, LMW-9, LMW-11, LMW-14, and LMW-15 are completed to monitor shallow, middle, and deeper zones along the southern half of the Rogers Coal Mine. Wells LMW-6 and LMW-7 monitor groundwater from the Frasier and Landsburg Coal Mines to the west and east of the Rogers Coal Mine, respectively.

2.0 SAMPLING ACTIVITIES

Groundwater sampling was conducted in accordance with the CMP (Ecology 2017), and included the following activities:

- Measurement of static water levels at monitoring wells.
- Well purging with the dedicated pumping systems installed in each well to ensure sample representativeness.
- Measurement of field parameters including: pH, specific conductance, temperature, dissolved oxygen, oxidation-reduction potential (ORP), and turbidity.
- Collection of representative samples in appropriate containers provided by the analytical laboratory.
- Analyses of groundwater samples for the following parameters:
  - Volatile Organic Compounds (VOCs) by United States Environmental Protection Agency (USEPA) USEPA Method 8260D
  - 1,4-Dioxane following USEPA SW-846 Method 8270E, for the quarterly sampling of well LMW-4 only
  - Total Petroleum Hydrocarbons (TPHs) by NWTPH-HCID
  - Total Metals by USEPA SW-846 Method 200.8 and SW-846 6010D
  - Total Mercury by USEPA SW-846 Method 7470A

Appendix A presents the laboratory analytical data validation report with added data qualifiers noted. Appendix B presents the laboratory analytical data. Field sampling activities were documented on Sample Integrity Data Sheets (SIDS), provided in Appendix C.

Following sample collection, all bottles were sealed, labeled, and placed in an iced cooler until delivery to the laboratory. Groundwater samples were transported under chain-of-custody procedures to Analytical Resources LLC (ARI), of Tukwila, Washington, for analyses.

The laboratory data packages underwent data validation. Items of note are provided in a validation memorandum in Appendix A. In general, data were found to be acceptable with minor qualification, with the following exception: the analytical result for 2-chloroethyl vinyl ether for LMW-4-0922 was rejected. The matrix spike/ matrix spike duplicate (MS/MSD) results were non-detect and the calculated percent recovery of the associated MS/MSD did not recover. Following guidelines and using professional judgment, the non-detect result for 2-chloroethyl vinyl ether for LMW-4-0922 was rejected. 2-chloroethyl vinyl ether has never been detected at the Site.

Data qualifiers are defined, and all data qualifiers assigned under the data validation process are presented in the Appendix A data validation memorandum.

Table 1 presents depths to groundwater measured during the event and calculated static water level elevations. Table 2 presents the field parameter measurements and laboratory analytical results for each groundwater sample at the Site.

3.0 RESULTS

The September 2023 groundwater monitoring results are summarized below:

- Laboratory analyses did not detect TPH above the laboratory reporting limits in any of the groundwater samples.
- There were no VOCs detected in groundwater above the trigger level concentrations prescribed in the CMP (Ecology 2017). The following VOC was detected above its respective laboratory reporting limit.
  - Chloroethane was detected in LMW-12 at 0.29 µg/L. The chloroethane detection in LMW-12 is consistent in concentration with previous detections of chloroethane in this well. The reported concentrations are significantly less than the MTCA Method B groundwater cleanup level of 80 µg/L.
- The single SVOC analyzed for during this sampling round was 1,4-dioxane in LMW-4, which was detected in groundwater above the trigger level concentrations prescribed in the CMP.
  - 1,4-dioxane was detected in LMW-4 at 1.9 µg/L, which is consistent with concentrations previously reported in LMW-4.
  - Under the approved Amendment to the CAP (Ecology 2021), 5 years of quarterly groundwater samples (20 rounds of sampling) were collected to conduct a statistical analysis on 1,4-dioxane trends (CAP Amendment Section 4.2). The statistical trend analysis of 1,4-dioxane was completed following the completion of the March 2023 sampling round, and the results were presented to Ecology (WSP 2023). The statistical trend analyses using Mann-Kendall and Theil-Sen methods indicated that 1,4-dioxane concentrations in LMW-2 and LMW-12 were stable to decreasing. In LMW-4, 1,4-dioxane trends indicated no clear trend using the Theil-Sen statistical method and potentially increasing trends using the Mann-Kendall method. In an email response, Ecology indicated that based on the statistical trend

analysis, future sampling of Site monitoring wells, except well LMW-4, shall continue at the frequency specified in the CMP (Ecology 2017). Ecology requested that quarterly monitoring of LMW-4 continue for 1,4-dioxane analysis until statistical trend analysis indicates concentrations are steady to decreasing in LMW-4.

- Metals detected in groundwater samples during the current sampling round include the following:
  - The groundwater samples from LMW-4, LMW-5, LMW-6, LMW-7, LMW-8, LMW-9, LMW-11, LMW-12, LMW-13, LMW-14, and LMW-15 contained iron concentrations above the laboratory reporting limit, but below the MTCA Method B cleanup level of 11 milligrams per liter (mg/L). Iron is a naturally occurring metal that is commonly associated with groundwater from coal mines (Fuste et al. 1983). The concentrations of iron reported during the September 2023 sampling event are within the range of typical concentrations reported during previous groundwater monitoring events at the Site.
  - The groundwater sample from LMW-11 contained total arsenic at a concentration of 0.0078 mg/L. Arsenic in LMW-11 is slightly above the MTCA Method A groundwater cleanup level (0.005 mg/L) but less than the Washington State primary drinking water MCL (0.01 mg/L). Arsenic was also detected in groundwater from LMW-15 at a concentration of 0.00307 mg/L, which is below both the MTCA Method A groundwater cleanup level and the Washington State primary drinking water MCL. Studies conducted by Washington State Department of Ecology determined that natural background concentrations of arsenic in groundwaters within the Puget Sound region is 0.008 mg/L (Ecology 2022). Arsenic has been detected in groundwater from LMW-11 near or below natural background and slightly above MTCA cleanup levels during every monitoring event since LMW-11 was installed. LMW-11 is screened within the deepest portions of the Rogers coal seam, where the groundwater is naturally reducing with low reduction-oxidation (redox) potential and low dissolved oxygen levels. Arsenic is a naturally occurring metal commonly detectable in groundwater, especially in groundwater having low redox and dissolved oxygen levels.

4.0 NEXT SAMPLING EVENT

The next compliance monitoring event is a quarterly monitoring event scheduled for December 2023, and will include sampling of Site groundwater monitoring well LMW-4, and off-site monitoring wells located north of the Site (LMW-20, LMW-21, LMW-22), and the private Landsburg Estates well (if access is granted).

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5.0 REFERENCES

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Washington State Department of Ecology (Ecology). 2017. Exhibit D of the Consent Decree – Compliance Monitoring Plan Landsburg Mine Site MTCA Remediation Project, Ravensdale, Washington. Prepared by WSP. June 7.

Ecology. 2021. Amendment to Cleanup Action Plan Landsburg Mine Site MTCA Remediation Project, Ravensdale, Washington. March 26.

Ecology 2022. Natural Background Groundwater Arsenic Concentrations in Washington State, Study Results, by Charles San Juan. January 2022.

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Tables

Table 1: Groundwater Elevation Data, Landsburg Mine Site, September 26, 2023

	LMW-1	LMW-2	LMW-3	LMW-4[1]	LMW-5	LMW-6	LMW-7[1]	LMW-8	LMW-9	LMW-10	LMW-11	LMW-12	LMW-13R	LMW-14[1]	LMW-15
Water Depths															
Date of data collection	9/26/2023	9/26/2023	9/26/2023	9/26/2023	9/26/2023	9/26/2023	9/26/2023	9/26/2023	9/26/2023	9/26/2023	9/26/2023	9/26/2023	9/26/2023	9/26/2023	9/26/2023
Time of data collection	10:39 AM	3:25 PM	12:19 PM	1:57 PM	12:11 PM	10:16 AM	12:49 PM	12:01 PM	12:27 PM	12:40 PM	11:16 AM	9:12 AM	10:57 AM	10:54 AM	11:31 AM
Measured to Top of PVC (ft btc)	144.96	7.72	13.78	9.88	15.15	42.94	215.00	5.01	100.23	0.80	158.19	12.07	12.59	161.01	152.20
Surveyed Elevation															
Top of PVC (ft NAVD88)	765.36	617.79	656.75	619.27	658.27	632.33	771.51	646.97	743.99	618.98	802.19	625.35	625.86	805.12	796.46
Top of Monument (ft NAVD88)	766.16	618.38	657.48	619.89	658.87	633.00	771.88	NC	NC	619.10	802.51	625.49	625.91	805.14	796.61
Ground Level (ft NAVD88)	763.02	614.92	654.40	617.37	655.63	629.95	768.79	645.25	741.13	615.78	799.89	621.90	622.07	802.22	792.64
Corrected Water Elevation															
Using PVC elevation (ft NAVD88)	**620.40**	**610.07**	**642.97**	**609.39**	**643.12**	**589.39**	**556.51**	**641.96**	**643.76**	**618.18**	**644.00**	**613.28**	**613.27**	**644.11**	**644.26**

Notes:

[1] Data corrected to accommodate well inclination from vertical

NA = Not applicable

NC = Data not collected

ft btc = feet below top of casing

ft NAVD88 = elevation in feet NAVD88

Table 2: September 2023 Groundwater Analytical Results Landsburg Mine Site

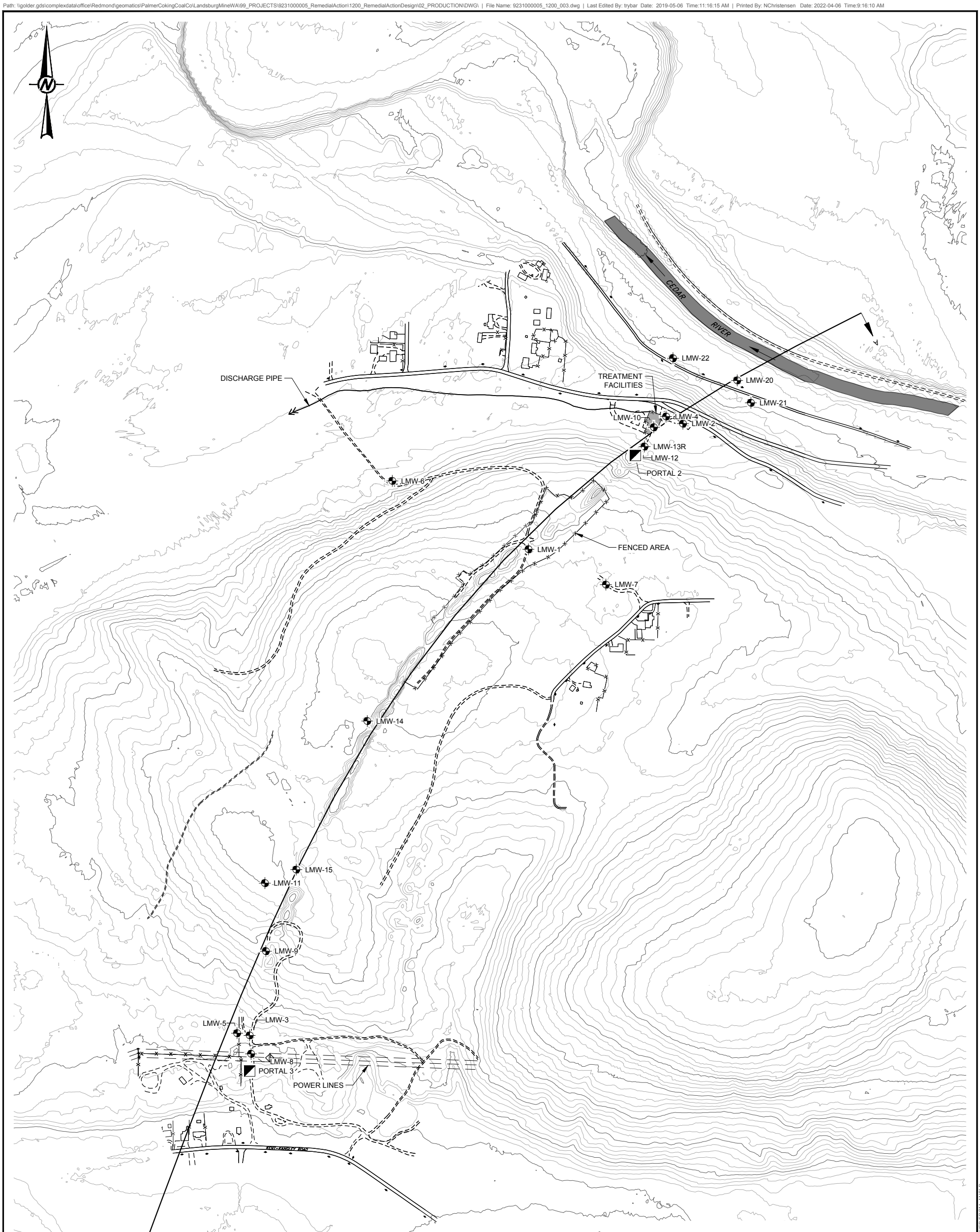
ANALYTE	UNITS	LMW-2	LMW-2 Duplicate	LMW-3	LMW-4	LMW-5	LMW-6	LMW-7	LMW-8	LMW-9	LMW-10	LMW-11	LMW-12	LMW-13R	LMW-14	LMW-15	Field Blank 1	Field Blank 2	Trip Blank 1	Trip Blank 2
		9/26/2023	9/26/2023	9/27/2023	9/26/2023	9/27/2023	9/28/2023	9/28/2023	9/27/2023	9/27/2023	9/26/2023	9/28/2023	9/26/2023	9/26/2023	9/28/2023	9/28/2023	9/27/2023	9/28/2023	-	-
Field Parameter																				
Temperature	°C	10.9	-	10.8	10.4	10.5	10	13.8	12.7	10.3	11.9	10.1	10.1	12.7	10.6	9.7	-	-	-	-
pH	stnd	6.94	-	7.8	7.05	6.98	6.93	7.3	7.03	7.09	8.78	7.27	6.73	7.52	6.66	7.45	-	-	-	-
Specific Conductance	uS/cm	911	-	303.6	918	674.8	260	517.4	620.2	645.7	326.1	539.2	490.7	794	1015	502.9	-	-	-	-
Dissolved Oxygen	mg/L	0.34	-	0.25	0.91	0.35	1.38	0.59	8.04	0.55	0.2	1.05	0.52	4.72	0.75	0.94	-	-	-	-
ORP	mV	-36.2	-	53.9	-61.5	-38.3	-45.8	-75.6	-44.8	-67.2	144	-63.9	-98.2	-63.5	-48.9	-118.3	-	-	-	-
Turbidity	NTU	1.15	-	0.69	0.34	0.26	3.68	1.53	1.55	0.64	1.04	1.35	8.45	3.3	2.6	1.72	-	-	-	-
Metals (Total)																				
Aluminum	mg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	3 U	0 U	1 U	NA	NA
Antimony	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	NA	NA
Arsenic	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	**0.00777**	0.003 U	0.003 U	0.003 U	**0.00307**	0.003 U	0.003 U	NA	NA
Barium	mg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA
Beryllium	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA
Cadmium	mg/L	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	NA	NA
Calcium	mg/L	**119**	**118**	**36.6**	**105**	**79.1**	**27.6**	**43.0**	**71.4**	**77.0**	**6.58**	**58.8**	**62.6**	**88.7**	**130**	**57.6**	0.5 U	0.5 U	NA	NA
Chromium	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA
Cobalt	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA
Copper	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	NA	NA
Iron	mg/L	0.2 U	0.2 U	0.2 U	**1.30**	**0.417**	**2.24**	**0.702**	**13.9**	**1.43**	0.2 U	**0.499**	**16.4**	**0.710**	**9.69**	**3.90**	0.2 U	0.2 U	NA	NA
Lead	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA
Magnesium	mg/L	**73.5**	**72.3**	**15.5**	**63.1**	**43.3**	**14.3**	**19.8**	**38.1**	**41.4**	**2.90**	**26.4**	**39.7**	**41.8**	**60.0**	**24.6**	0.5 U	0.5 U	NA	NA
Manganese	mg/L	**0.234**	**0.229**	**0.0157**	**0.125**	**0.201**	**0.0277**	**0.0869**	**0.480**	**0.168**	0.01 U	**0.174**	**0.952**	**0.0324**	**0.594**	**0.368**	0.01 U	0.01 U	NA	NA
Mercury	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA	NA
Nickel	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA
Potassium	mg/L	**3.62**	**3.59**	**1.61**	**3.75**	**2.38**	**0.674**	**2.64**	**2.11**	**2.26**	**1.18**	**2.03**	**3.07**	**3.14**	**3.48**	**1.83**	0.5 U	0.5 U	NA	NA
Selenium	mg/L	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	NA	NA
Silver	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	NA	NA
Sodium	mg/L	**20.7**	**20.4**	**10.2**	**42.1**	**14.1**	**7.34**	**46.6**	**12.6**	**14.0**	**84.4**	**23.1**	**8.60**	**78.7**	**10.5**	**12.8**	0.5 U	0.5 U	NA	NA
Thallium	mg/L	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	NA	NA
Vanadium	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	NA	NA
Zinc	mg/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA
Volatile Organic Compounds (VOCs)																				
Acetone	ug/L	5 U	5 U	5 U	5 U	5.45 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acrolein	ug/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 U	5 U	5 U	5 U
Acrylonitrile	ug/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 U	1 U	1 U	1 U
Benzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromobenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromochloromethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromoform	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromomethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
methyl ethyl ketone	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
n-Butylbenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Sec-Butylbenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
tert-butylbenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Carbon Disulfide	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Carbon Tetrachloride	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.29**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Chloroethyl vinyl ether	ug/L	1 UJ	1 UJ	1 UJ	1 R	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 U	1 U	1 U	1 U
Chloroform	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloromethane	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Chlorotoluene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dichlorodifluoromethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dibromo-3-Chloropropane	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylene Dibromide	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibromomethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichlorobenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,4-Dichloro-2-butene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Table 2: September 2023 Groundwater Analytical Results Landsburg Mine Site

ANALYTE	UNITS	LMW-2	LMW-2 Duplicate	LMW-3	LMW-4	LMW-5	LMW-6	LMW-7	LMW-8	LMW-9	LMW-10	LMW-11	LMW-12	LMW-13R	LMW-14	LMW-15	Field Blank 1	Field Blank 2	Trip Blank 1	Trip Blank 2
		9/26/2023	9/26/2023	9/27/2023	9/26/2023	9/27/2023	9/28/2023	9/28/2023	9/27/2023	9/27/2023	9/26/2023	9/28/2023	9/26/2023	9/26/2023	9/28/2023	9/28/2023	9/27/2023	9/28/2023	-	-
1,1-Dichloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cis-1,2-Dichloroethene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,2-Dichloroethene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichloropropane	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,2-Dichloropropane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloropropene	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cis-1,3-Dichloropropene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,3-Dichloropropene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Ethylbenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Hexachlorobutadiene	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexanone	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Iodomethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cumene (isopropyl benzene)	ug/L	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 UJ	0.2 U	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
p-Isopropyltoluene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene Chloride	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl isobutyl ketone	ug/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Naphthalene	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Styrene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,3-Trichlorobenzene	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1,2-Tetrachloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Tetrachloroethene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Toluene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,1-Trichloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CFC-113	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,3-Trichloropropane	ug/L	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,4-Trimethylbenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Vinyl Acetate	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Vinyl Chloride	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
m, p-Xylene	ug/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
o-Xylene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Total Xylenes	ug/L	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Semi-Volatile Organic Compounds (SVOCs)																				
1,4-Dioxane	ug/L	NA	NA	NA	**1.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hydrocarbon Identification																				
Diesel Range	mg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA
Gas Range	mg/L	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	NA	NA
Lube Oil Range	mg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA

Notes:
U - Analyte was not detected above the Reporting Limit (RL).
J - Analyte was detected above the Method Detection Limit (MDL) but below the RL.
R - Analytical result is unusable because certain data quality criteria were not met.
Bold values indicate detections above the RL.
NA - Not Applicable

Figures



LEGEND

- MONITORING WELLS
- PIEZOMETER
- PROTECTIVE FENCE
- UNPAVED ROAD
- BUILDING

NOTE(S)

1. LMW-4 AND LMW-7 WERE DRILLED AT A 20° INCLINE; LMW-14 WAS DRILLED AT 15° INCLINE

0 300 600
1" = 300' FEET

CLIENT
LANDSBURG MINE SITE PLP GROUP

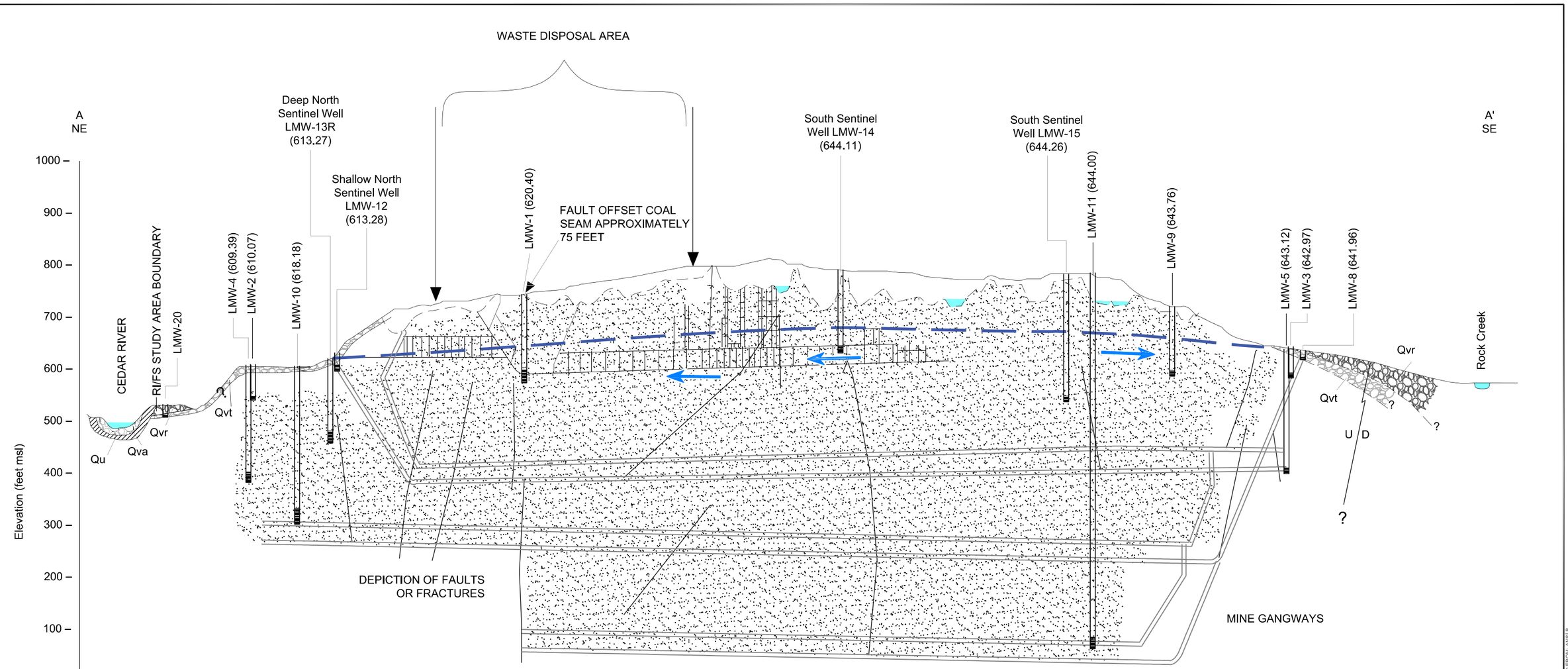
CONSULTANT
wsp

YYYY-MM-DD	2019-05-06
DESIGNED	REDMOND
PREPARED	JX
REVIEWED	JX
APPROVED	GZ

PROJECT
LANDSBURG MINE SITE
MTCA REMEDIAL ACTION

TITLE
GROUNDWATER MONITORING LOCATIONS

PROJECT NO.	PHASE	REV.	FIGURE
9231000005	1200	A	1



LEGEND

- POTENTIOMETRIC SURFACE
- OUTLINE OF TRENCH BOTTOM
- LMW-2 (610.69) — WELL ID (WATER LEVEL IN FT. AMSL)
- Qvt TILL, COMPACT MIXTURE OF GRAVEL OCCASIONAL BOULDERS IN CLAYEY SILTY SAND MATRIX
- SANDSTONE
- SURFACE WATER FEATURE EPHEMERAL INSIDE THE TRENCH
- ANTICIPATED COLLAPSED ZONE WITHIN MINE
- Qu DRIFT, TILL, FLUVIAL SAND AND GRAVEL, LACUSTRINE SAND, SILT, CLAY AND PEAT
- Qvr RECESSIONAL OUTWASH, WELL SORTED SAND AND PEBBLE-COBBLE
- Qva ADVANCED OUTWASH PEBBLE-COBBLE GRAVEL MAY INCLUDE VERY FINE SAND
- MONITORING INTERVAL
- GROUNDWATER FLOW DIRECTION

0 500
FEET

REFERENCE(S)

SOURCES FOR THE GEOLOGY AND MINE INFORMATION:
J.E. LUZIER 1969; SURFICIAL GEOLOGY STATE OF WASHINGTON, WATER WELL REPORTS MINE SUPERINTENDANT'S RECORDS LANDSBURG WELL LOGS

NOTE(S)

1. VERTICAL TO HORIZONTAL SCALE RATIO IS 2.5:1 WELLS ARE PROJECT NORMAL INTO THE STRIKE OF THE CROSS-SECTION A-A'

CLIENT
LANDSBURG PLP GROUP

CONSULTANT
wsp

YYYY-MM-DD	2023-12-20
DESIGNED	AP
PREPARED	TR
REVIEWED	GZ
APPROVED	GZ

PROJECT
LANDSBURG MINE SITE

TITLE
CROSS-SECTION ALONG STRIKE AT COAL SEAM - SEPTEMBER 26, 2023
CROSS-SECTION A-A'

PROJECT NO.	PHASE	REV.	FIGURE
GL9231000007	2023	A	2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

1 in
0

APPENDIX A

Laboratory Analytical Report Data Validation and Quality Assurance / Quality Control Review Memorandum

TECHNICAL MEMORANDUM

DATE December 1, 2023 **Project No.** GL923-1000-007.2023

TO Bill Kombol
Palmer Coking Coal Company

FROM Gary Zimmerman (WSP) **EMAIL gary.zimmerman@wsp.com**

LANDSBURG MINE SITE SEPTEMBER 2023 DATA VALIDATION & QUALITY ASSURANCE / QUALITY CONTROL REVIEW

This Data Usability Summary Report (DUSR) presents the findings of the data quality assessment performed on the analyses of water samples collected on September 26, 27, and 28, 2023 at the Landsburg Mine Site in Washington (Site) as part of the Landsburg Groundwater sampling project. Samples in the laboratory sample delivery group (SDG) as indicated in Table 1 were reviewed in this DUSR to identify quality issues which could affect the use of the sample data for decision making purposes.

Fourteen water samples, one field duplicate sample, two field blanks, and two trip blanks were collected by WSP. Samples were analyzed by Analytical Resources Inc. of Tukwila, Washington for the following parameters:

- Volatile Organic Compounds (VOCs) following United States Environmental Protection Agency (USEPA) USEPA SW-8461 Method 8260D, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
- 1,4-Dioxane following USEPA SW-846 Method 8270E.
- Northwest Total Petroleum Hydrocarbons – Hydrocarbon Identification Scan by NWTPH-HCID
- Total Metals by USEPA SW-846 Method 200.8 and SW-846 6010D
- Total Mercury by USEPA SW-846 Method 7470A

Quality assurance / quality control (QA/QC) reviews of laboratory data were performed in the laboratory in accordance with the laboratory quality assurance program plan (QAPP). The data validation QA/QC review focused primarily on laboratory results and quality control data to ensure that work plan data quality objectives were met for the project.

[1] USEPA. 2020. Test methods for evaluating solid waste, physical/chemical methods (SW-846): 3rd edition, and subsequent updates, Environmental Protection Agency, National Center for Environmental Publications, Cincinnati, Ohio, accessed at URL http://www.epa.gov/epaoswer/hazwaste/test/sw846.htm

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Data validation was conducted in accordance with the criteria outlined in the National Functional Guidelines for Organic Review (USEPA 2020a[2]) and Inorganic Review (USEPA 2020b[3]), modified to include method specific requirements of the laboratory, and laboratory standard operating procedures. Where there was a discrepancy between the QC criteria in the Guidelines and the QC criterion established in the analytic methodology, method-specific criteria, the QAPP, or professional judgment was used.

In general, chemical results for the samples collected at the Site were evaluated based on laboratory preservation, hold times, laboratory and field blank contamination, outlying precision or accuracy parameters, or based on professional judgment. The following definitions provide brief explanations of the qualifiers which may have been assigned to data during the data validation process.

Data Qualifier Definitions

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J+ The result is an estimated quantity, but the result may be biased high.

J- The result is an estimated quantity, but the result may be biased low.

UJ The analyte was analyzed for but was not detected. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

U The analyte was analyzed for but was not detected.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

B The analyte was not detected in the method blank.

The validation level for the data is Tier 2A, and included the following:

- Data package completeness assessment
- Verification of required deliverables
- Evaluation of holding times
- Laboratory narrative evaluation
- Evaluation and qualification of QC elements for surrogates, matrix spike samples, laboratory control samples, blanks (method, equipment, and trip blank) laboratory duplicate samples and field duplicate samples
- Evaluation of detection limits

[2] United States Environmental Protection Agency (USEPA). 2020a. National Functional Guidelines for Organic Superfund Methods Data Review. OLEM 9240.0-51. EPA-540-R-20-005, November.

[3] USEPA. 2020b. National Functional Guidelines for Inorganic Superfund Methods Data Review. OLEM 9240.0-66. EPA-542-R-20-006, November.

Raw data and calibration elements, including GC instrument tuning and performance check, initial and continuing calibration, internal standard performance, and analyte identification, were not provided by the lab. Data review and validation was performed by an experienced QA personnel independent of the analytical laboratory and not directly involved in the project. Data qualifiers that were applied by the laboratory have been removed from the data summary report sheets, when applicable, and superseded by data validation qualifiers.

Overall, the data review showed that data are acceptable for use, except for 2-chloroethyl vinyl ether. The MS/MSD results were non-detect and the calculated percent recovery of the associated MS/MSD did not recover. Following Guidelines and using professional judgment, the results for 2-chloroethyl vinyl ether were rejected (R) in LMW-4. 2-chloroethyl vinyl ether was not detected during the September 2023 sampling round and has never been detected at the Site. Other minor data qualifiers were also reported as detailed in Attachment B.

The laboratory analyzed 2-chloroethyl vinyl ether, acrolein, and acrylonitrile from the preserved volatile organic analysis (VOA) vials. Due to the acid-labile nature of analytes 2-chloroethyl vinyl ether, acrolein and acrylonitrile, when samples were collected in acid-preserved vials but all associated LCS/LCSDs were within or above QC criteria, the associated non-detect results for these three analytes were qualified as estimated (UJ) due to possible acid degradation, except for 2-chloroethyl vinyl ether, the results for which were rejected in LMW-4 as noted above. 2-chloroethyl vinyl ether, acrolein, and acrylonitrile were not detected during the September 2023 sampling round and have never been detected at the Site.

Qualifier Summary Table (Table 2) is included with the qualifiers applied. For details about the data validation, refer to the data validation checklist in Attachment A. The following bulleted items highlight comments and/or qualifications to specific parameters:

- A data completeness of 99% was achieved, which exceeds the QAPP stipulated completeness goal of 90%.

Attachments

Attachment A Tables

Table 1: Sample Collection and Analysis Summary Landsburg Mine Water Sampling Investigation September 2023

Table 2: Qualifier Summary Table Landsburg Mine Water Sampling Investigation September 2023

Table 3: MS/MSD Recoveries

Table 4: LCS/LCSD Recoveries

Attachment B Level 2A Data Validation Checklist

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ATTACHMENT A

Tables

Table 1: Sample Collection and Analysis Summary
Q3 - September 2023

						Analyses/Parameters				
SDG	**Field Identification**	**Collection Date**	**Lab Identification**	**Matrix**	**QC Samples**	**VOCs by 8260D**	**1,4-Dioxane by 8270E-SIM**	**NWTPH HCID**	**TPH-DX+TPH-GX (On Hold)**	**Total Priority Pollutant Metals 200.8/6010D/7470A**
23J0051	LMW-12-0923	9/26/2023	23J0051-01	WG	-	X	-	X	X	X
23J0051	LMW-13R-0923	9/26/2023	23J0051-02	WG	-	X	-	X	X	X
23J0051	LMW-10-0923	9/26/2023	23J0051-03	WG	-	X	-	X	X	X
23J0051	LMW-4-0923	9/26/2023	23J0051-04	WG	MS/MSD	X	X	X	X	X
23J0051	LMW-2-0923	9/26/2023	23J0051-05	WG	-	X	-	X	X	X
23J0051	LMW-2-0923-D	9/26/2023	23J0051-06	WG	FD (LMW-2-0923)	X	-	X	X	X
23J0051	LMW-3-0923	9/27/2023	23J0051-07	WG	-	X	-	X	X	X
23J0051	LMW-5-0923	9/27/2023	23J0051-08	WG	-	X	-	X	X	X
23J0051	LMW-9-0923	9/27/2023	23J0051-09	WG	-	X	-	X	X	X
23J0051	LMW-8-0923	9/27/2023	23J0051-10	WG	-	X	-	X	X	X
23J0051	LMW-FB-0923	9/27/2023	23J0051-11	WQ	FB	X	-	X	X	X
23J0051	Trip Blank	9/26/2023	23J0051-12	WQ	TB	X	-	-	-	-
23J0141	LMW-6-0923	9/28/2023	23J0141-01	WG	-	X	-	X	X	X
23J0141	LMW-14-0923	9/28/2023	23J0141-02	WG	-	X	-	X	X	X
23J0141	LMW-15-0923	9/28/2023	23J0141-03	WG	-	X	-	X	X	X
23J0141	LMW-11-0923	9/28/2023	23J0141-04	WG	-	X	-	X	X	X
23J0141	LMW-7-0923	9/28/2023	23J0141-05	WG	-	X	-	X	X	X
23J0141	LMW-FB1-0923	9/28/2023	23J0141-06	WQ	FB	X	-	X	X	X
23J0141	Trip Blank	9/28/2023	23J0141-07	WQ	TB	X	-	-	-	-

Notes:
All analyses performed by Analytical Resources, Incorporated (ARI), Tukwila WA.
Samples collected for TPH-DX and GX were placed on hold.
MS/MSD was not collected for TPH-DX and HX

Abbreviations:
GW: Groundwater
WQ: Water quality
VOCs: Volatile Organic Compounds
SIM: Selective Ion Monitoring
NWTPH: Northwest Total Petroleum Hydrocarbons
HCID: Hydrocarbon Identification
MS/MSD: Matrix Spike/Matrix Spike Duplicate
FB: Field Blank
TB: Trip Blank
FD: Field Duplicate
SDG: Sample Delivery Group

Table 2: Qualifier Summary Table
Annual Groundwater Sampling - September 2023

SDG	Sample Name	Constituent	New Result	New MDL	New RL	Qualifier	Reason
23J0051	LMW-4-0923	2-chloroethyl vinyl ether	--	--	--	R	MS/MSD %R below lower control limit (not recovered); Improper sample preservation
23J0051 and 23J0141	All Samples	Acrolein	--	--	--	UJ	Improper sample preservation
23J0051 and 23J0141	All Samples	Acrylonitrile	--	--	--	UJ	Improper sample preservation
23J0051 and 23J0141	All Samples, except LMW-4-0923	2-Chloroethyl vinyl ether	--	--	--	UJ	Improper sample preservation
23J0051	LMW-9-0923	Isopropyl Benzene	--	--	--	UJ	LCS and RPD outside QC criteria
23J0051	LMW-5-0923	Isopropyl Benzene	--	--	--	UJ	LCS and RPD outside QC criteria
23J0051	LMW-3-0923	Isopropyl Benzene	--	--	--	UJ	LCS and RPD outside QC criteria
23J0051	LMW-2-0923-D	Isopropyl Benzene	--	--	--	UJ	LCS and RPD outside QC criteria
23J0051	LMW-2-0923	Isopropyl Benzene	--	--	--	UJ	LCS and RPD outside QC criteria
23J0051	LMW-4-0923	Isopropyl Benzene	--	--	--	UJ	LCS and RPD outside QC criteria
23J0051	LMW-10-0923	Isopropyl Benzene	--	--	--	UJ	LCS and RPD outside QC criteria
23J0051	LMW-13R-0923	Isopropyl Benzene	--	--	--	UJ	LCS and RPD outside QC criteria
23J0051	LMW-12-0923	Isopropyl Benzene	--	--	--	UJ	LCS and RPD outside QC criteria
All SDGs	All Samples	All Results	--	--	--	--	Laboratory applied U-qualifiers are retained unless other qualifications are indicated in this table. All other laboratory qualifiers are removed.

Abbreviations
MDL - Method Detection Limit
MS - Matrix Spike
MSD - Matrix Spike Duplicate
RL - Reporting Limit
SDG - Sample Delivery Group
%R - Percent Recovery

Qualifier Definitions
UJ: Non-Detect Result, RL is estimated
U: Not detected above sample concentration
R: Result is rejected and considered unusable

Table 4 LCS/LCSD Recoveries
Q3 Groundwater Sampling

SDG	Sample Name	Parameter	Analyte	LCS/LCSD% R	RPD	%R/RPD Criteria
23J0051	BLJ0118-BS1 BLJ0118-BSD1	8260D	t-Butylbenzene	**128/130**	1.5	78-125/30
23J0051	BLJ0118-BS1 BLJ0118-BSD1	8260D	Isopropyl Benzene	115/**182**	**45.4**	80-128/30
23J0051	BLJ0118-BS1 BLJ0118-BSD1	8260D	1,3,5-Trimethylbenzene	128/**131**	1.8	80-129/30

Abbreviations

MS - Matrix Spike
MSD - Matrix Spike Duplicate
SDG - Sample Delivery Group
%R - Percent Recovery

Table 3 MS/MSD Recoveries
Q3 Groundwater Sampling

SDG	Sample Name	Parameter	Analyte	MS/MSD% R	RPD	%R/RPD Criteria	Sample>4x spike value
23J0051	LMW-4-0923	8260D	Acrolein	**24.1/25.2**	4.58	52-190/30	No
23J0051	LMW-4-0923	8260D	2-Chloroethyl vinyl ether	**0/0**	0	64-120/30	No
23J0051	LMW-4-0923	8260D	Isopropyl Benzene	**156/160**	2.26	80-128/30	No
23J0051	LMW-4-0923	6010D	Calcium	**139**/124	1.25	75-125/20	Yes
23J0051	LMW-4-0923	6010D	Magnesium	**137**/124	1.65	75-125/20	Yes

Abbreviations
MS - Matrix Spike
MSD - Matrix Spike Duplicate
SDG - Sample Delivery Group
%R - Percent Recovery

ATTACHMENT B

Level 2A Data Validation Checklist

Project Name: Landsburg Groundwater
Project Number/Phase/Task: GL9231000007 2023
Reviewing Company: WSP
Project Manager: Gary Zimmerman
Data Evaluator: Julia Campbell
Data Evaluation Date: November 8, 2023
Checked by: Michael Shadle
Review Date: November 20, 2023
Laboratory: Analytical Resources, Inc., Tukwila, WA
Lab SDG #: 23J0051, 23J0141

Matrix: ☒ Aqueous ☐ Soil ☐ Sediment ☐ Waste ☐ Air ☐ Other:

Analytical Methods: See Table 1.

Sample Information: See Table 1.

Work Plan or QAPP: Compliance Monitoring Plan and QAPP for Landsburg Mine Site (Exhibit D, to the Consent Decree, 2017).

Data Validation Guidance: National Functional Guidelines for Organic Superfund Methods Data Review, EPA-540-R-20-005, November 2020 and National Functional Guidelines for Inorganic Superfund Methods Data Review, EPA-EPA-542-R-20-006, November 2020

COC and Sample Receipt	**YES**	**NO**	**NA**	**COMMENT**
a) COC complete and correct?	☒	☐		See Note 1
b) COC documents release of custody (signed and dated)?	☒	☐		
c) Field QC types provided (note types)?	☒	☐	☐	FB, FD, TB, MS/MSD; See Table 1
d) Did the cooler contents match the COC?	☒	☐		
e) Were samples received in good condition?	☒	☐		
f) Were cooler temperatures within control limits?	☒	☐		

Data Package Information	**YES**	**NO**	**NA**	**COMMENT**
a) Laboratory name and location documented?	☒	☐		
b) All samples on COC reported in data package?	☒	☐		
c) Requested analytical methods used?	☐	☒		See Note 2
d) Requested sample preparation methods used?	☒	☐	☐	
e) Requested analyte list reported?	☒	☐		
f) Requested units reported?	☒	☐	☐	
g) Did the laboratory define the qualifiers used?	☒	☐		
h) Data package contains all information necessary to complete the data quality review?	☒	☐		

Analytical Assessment	**YES**	**NO**	**NA**	**COMMENT**
a) Solid samples reported on a dry-weight basis?	☐	☐	☒	
b) Were solid samples percent moisture criteria acceptable?	☐	☐	☒	
c) Were sample dilutions noted?	☒	☐		
d) Were detected concentrations less than the QL qualified by the laboratory?	☒	☐		
e) Were detected concentrations above the calibration range reported by the laboratory?	☒	☐		

Analytical Assessment	**YES**	**NO**	**NA**	**COMMENT**
f) Did the laboratory satisfy the requested sensitivity requirements?	☒	☐		

Laboratory Case Narrative	**YES**	**NO**	**NA**	**COMMENT**
a) Do the laboratory narrative or laboratory qualifiers indicate deficiencies?	☒	☐	☐	
b) Were all deficiencies noted in the laboratory qualifiers or narrative?	☒	☐	☐	

Sample Preservation and Holding Time	**YES**	**NO**	**NA**	**COMMENT**
a) Were samples properly preserved?	☐	☒		See note 3
b) Were holding times met for sample preparation?	☒	☐	☐	
c) Were holding times met for sample analysis?	☒	☐		

Blanks	**YES**	**NO**	**NA**	**COMMENTS**
a) Were blanks analyzed at the appropriate frequency?	☒	☐		
b) Were any analytes detected in the associated preparation/method blank?	☒	☐		
c) Were any analytes detected in the associated trip blanks?	☒	☐	☐	
d) Were any analytes detected in the associated field or equipment/rinsate blanks?	☒	☐	☐	
e) Were any analytes detected in the associated storage blanks?	☒	☐	☐	

Surrogates or Deuterated Monitoring Compounds	**YES**	**NO**	**NA**	**COMMENTS**
a) Were the correct surrogate compounds added to each sample?	☒	☐	☐	
b) Were surrogate recoveries within control limits?	☒	☐	☐	
c) If not, were samples analyzed at dilution factors of 20x or greater?	☐	☐	☒	

LCS/LCSD	**YES**	**NO**	**NA**	**COMMENTS**
a) Were LCS/LCSD reported at the appropriate frequency?	☒	☐		
b) Were proper analytes included in the LCS/LCSD?	☒	☐		
c) Were LCS/LCSD recoveries within control limits?	☐	☒		See Table 3 and Note 4
d) Were RPD values within control limits (if LCSD was analyzed)?	☒	☐	☐	

MS/MSDs	**YES**	**NO**	**NA**	**COMMENTS**
a) Were project-specific MS (and MSD) reported?	☒	☐		LMW-4-0923
b) Were proper analytes reported in the MS/MSD?	☒	☐	☐	
c) Were project-specific MS/MSD recoveries within control limits?	☐	☒	☐	See Table 4 and Note 5

MS/MSDs	**YES**	**NO**	**NA**	**COMMENTS**
d) If not, were sample concentrations greater than 4x the spiking concentration?	☒	☐	☐	See Table 3
e) Was the RPD or absolute difference within control limits (if project-specific MSD analyzed)?	☐	☒	☐	See Table 3
f) Were project-specific post-digestion spikes analyzed?	☐	☐	☒	
g) Were project-specific post-digestion spike recoveries within control limits?	☐	☐	☒	

Duplicates	**YES**	**NO**	**NA**	**COMMENTS**
a) Were project-specific laboratory duplicates reported?	☒	☐	☐	23J0141-01
b) Was laboratory duplicate RPD or absolute difference criteria acceptable?	☒	☐	☐	
c) Were field duplicates reported?	☒	☐	☐	LMW-2-0923/LMW-2-0923-D
d) Was field duplicate RPD or absolute difference criteria acceptable?	☒	☐	☐	

ICP Serial Dilution (SD)	**YES**	**NO**	**NA**	**COMMENTS**
a) Was project-specific ICP SD data provided?	☐	☐	☒	
b) Were project-specific ICP SD within acceptable criteria?	☐	☐	☒	

Overall Evaluation	**YES**	**NO**	**NA**	**COMMENTS**
a) Were there any other technical problems not previously addressed?	☐	☒		
b) Were data acceptable and usable, except where noted?	☒	☐		

Comments/Notes:

1. In SDG 23J0051, the sample time for sample LMW-10-0923 is listed as 1247 on the COC but the bottle label says 1330. The lab used the sample time on the COC. No further action is required other than to note.

2. In both SDGs, the COC indicates that TPH-Dx and TPH-Gx were put on hold. The samples were not taken off hold or analyzed. There is no other action but to note.

3. Samples for analysis of 2-chloroethyl vinyl, acrolein, and acrylonitrile were collected in preserved VOA vials and the recoveries were potentially lost due to the acid-liable nature of these compounds. Specifically, acrolein and acrylonitrile need to be preserved in sodium thiosulfate at a pH range between 4 to 5. Following Guidelines and using professional judgement not-detects are qualified as 'UJ'.

4. LCS/LCSD recoveries were outside of acceptance criteria for select analytes, as summarized in Table 3. Using professional judgment, when only one QC indicator (LCS/LCSD/RPD) did not meet QC criteria, qualification was not required. Following Guidelines and using professional judgement, when the LCS/LCSD criteria is below the QC criteria, associated non-detect results are qualified (UJ).

5. MS/MSD recoveries were outside of acceptance criteria for select analytes as summarized in Table 4. Using professional judgment, when only one QC indicator (MS/MSD/RPD) did not meet QC criteria, qualification was not required. If the parent sample concentration was four times greater than the spiking concentration, no qualification was required.

The MS/MSD results for 2-chloroethyl vinyl ether were non-detect and the lab did not calculate both the recoveries and RPD. Samples were collected in preserved VOA vials and the recovery was most likely lost due to the acid-labile nature of 2-chloroethyl vinyl ether. Following Guidelines and using professional judgment, when the MS/MSD results were non-detect and the calculated percent recovery of the associated MS/MSD did not recover, the associated non-detect results were rejected (R). When the MS/MSD recoveries were greater than the upper acceptance limit, the non-detect result in the parent sample did not require qualification.

Data qualification: See Table 2.

APPENDIX B

Laboratory Analytical Report

Analytical Resources, LLC
Analytical Chemists and Consultants
Tukwila, WA

02 November 2023

Gary Zimmerman
Golder Associates
18300 NE Union Hill Road Suite 200
Redmond, WA 98052-3333

RE: Landsburg (GL9231000007.2023)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
23J0051	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 235001	Turn-around Requested: Standard	Date: 9/27/23	
ARI Client Company: Golder	Phone: 425-883-0777	Page: 1 of 2	
Client Contact: Gary Zimmerman/Autumn Pearson		No. of Coolers:	Cooler Temps: 2.4°, 1.2°, 3.0°, 4.6°
Client Project Name: Landsburg 2023-09 Sampling			
Client Project #: GL9231000007.2023	Samplers: AP + AW + SG		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: VOCs	1,4-Dioxane	Total Priority Metal	TPH-HCID (NWTPH)	TPH-Dx (HOLD)	TPH-Gx (HOLD)			Notes/Comments
LMW-12-0923	9/26/23	1035	W	8	X		X	X	X	X			Analyze in accordance with MSA between Golder and ARI Ecology EIM EDD
LMW-13R-0923	"	1140	"	8	X		X	X	X	X			
LMW-10-0923	"	1247	"	8	X		X	X	X	X			
LMW-4-0923	"	1430	"	21	X	X	X	X	X	X			MS/MSD collected. (Except for -Gx and -Dx holds)
LMW-2-0923	"	1610	"	8	X		X	X	X	X			
LMW-2-0923-D	"	1620	"	8	X		X	X	X	X			
LMW-3-0923	9/27/23	1045	"	8	X		X	X	X	X			
LMW-5-0923	"	1145	"	8	X		X	X	X	X			
LMW-9-0923	"	1305	"	8	X		X	X	X	X			
LMW-8-0923	"	1415	"	8	X		X	X	X	X			

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
HOLD TPH FOLLOW-UPS. CLIENT SPECIFIC RLs/Analyte List	(Signature)	(Signature)	(Signature)	(Signature)
*Used one 1 L amber in place of two 500 mLs.	Printed Name: Autumn Pearson	Printed Name: Ronan M.	Printed Name:	Printed Name:
	Company: WSP	Company: ARI	Company:	Company:
	Date & Time: 9/27/23 1638	Date & Time: 9/27/23 1638	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: Unless specified by workorder or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 233005,1	Turn-around Requested: Standard	Date: 9/27/23	
ARI Client Company: Golder	Phone: 425-883-0777	Page: 2 of 2	
Client Contact: Gary Zimmerman/Autumn Pearson		No. of Coolers:	Cooler Temps:
Client Project Name: Landsburg 2023-09 Sampling			
Client Project #: GL9231000007.2023	Samplers: AP + AW + SG		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	VOCs	1,4-Dioxane	Total Priority Metal	TPH-HCID (NWTPH)	TPH-Dx (HOLD)	TPH-Gx (HOLD)			Notes/Comments
					Analysis Requested								
LMW-FB-0923	9/27/23	1412	W	8	X		X	X	X	X			Analyze in accordance with MSA between Golder and ARI Ecology EIM EDD
Trip Blank	↓	–	W	3	X								

Comments/Special Instructions: HOLD TPH FOLLOW-UPS. CLIENT SPECIFIC RLs/Analyte List *used one 1 L amber in place of two 500mls.	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Autumn Pearson	Printed Name: Roman M.	Printed Name:	Printed Name:
	Company: WSP	Company: ARI	Company:	Company:
	Date & Time: 9/27/23 1638	Date & Time: 9/27/23 1638	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: Unless specified by workorder or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LMW-12-0923	23J0051-01	Water	26-Sep-2023 10:35	27-Sep-2023 16:38
LMW-13R-0923	23J0051-02	Water	26-Sep-2023 11:40	27-Sep-2023 16:38
LMW-10-0923	23J0051-03	Water	26-Sep-2023 12:47	27-Sep-2023 16:38
LMW-4-0923	23J0051-04	Water	26-Sep-2023 14:30	27-Sep-2023 16:38
LMW-2-0923	23J0051-05	Water	26-Sep-2023 16:10	27-Sep-2023 16:38
LMW-2-0923-D	23J0051-06	Water	26-Sep-2023 16:20	27-Sep-2023 16:38
LMW-3-0923	23J0051-07	Water	27-Sep-2023 10:45	27-Sep-2023 16:38
LMW-5-0923	23J0051-08	Water	27-Sep-2023 11:45	27-Sep-2023 16:38
LMW-9-0923	23J0051-09	Water	27-Sep-2023 13:05	27-Sep-2023 16:38
LMW-8-0923	23J0051-10	Water	27-Sep-2023 14:15	27-Sep-2023 16:38
LMW-FB-0923	23J0051-11	Water	27-Sep-2023 14:12	27-Sep-2023 16:38
Trip Blank	23J0051-12	Water	26-Sep-2023 10:35	27-Sep-2023 16:38

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of all associated "Q" flagged analytes which are out of control high in the CCAL. All associated samples that contain analyte have been flagged with a "Q" qualifer.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits with the exception of analytes flagged on the associated forms.

The matrix spike/matrix spike duplicate (MS/MSD) spike recoveries and relative percent difference (RPD) were within advisory control limits with the exception of analytes flagged on the associated forms.

1,4-Dioxane- EPA Method SW8270E

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

Total Metals - EPA Method 200.8, 6010D and 7470A

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Hydrocarbon Identification (HCID) - WA-Ecology Method NW-HCID

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Golder

Project Name: Landsburg 2023-09

COC No(s): NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: 235005 1

Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 2.4 1.2 3.0 4.6 ___ ___

Time 1638

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 9708

Cooler Accepted by: _____ Date: 9/27/23 Time: 1638

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:			
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers? MD 10/03/23		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA	09/21/23	

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: MD Date: 10/03/23 Time: 0950 Labels checked by: MD

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

Sample time for sample LMW-10-0923 is listed as 1247 on C.O.C., bottle label says 1330. Sample logged by C.O.C.

By: MD Date: 10/03/23

Analytical Resources, LLC
Analytical Chemists and Consultants

Printed: 10/3/2023 10:25:31AM

WORK ORDER

23J0051

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: Golder Associates | **Project Manager:** Kelly Bottem

Project: Landsburg | **Project Number:** GL9231000007.2023

Preservation Confirmation

Container ID	Container Type	pH
23J0051-01 A	Glass NM, Amber, 1000 mL	
23J0051-01 B	Glass NM, Amber, 1000 mL	
23J0051-01 C	HDPE NM, 500 mL, 1:1 HNO3	<2 pass
23J0051-01 D	VOA Vial, Clear, 40 mL, HCL	
23J0051-01 E	VOA Vial, Clear, 40 mL, HCL	
23J0051-01 F	VOA Vial, Clear, 40 mL, HCL	
23J0051-01 G	VOA Vial, Clear, 40 mL, HCL	
23J0051-01 H	VOA Vial, Clear, 40 mL, HCL	
23J0051-02 A	Glass NM, Amber, 1000 mL	
23J0051-02 B	Glass NM, Amber, 1000 mL	
23J0051-02 C	HDPE NM, 500 mL, 1:1 HNO3	<2 pass
23J0051-02 D	VOA Vial, Clear, 40 mL, HCL	
23J0051-02 E	VOA Vial, Clear, 40 mL, HCL	
23J0051-02 F	VOA Vial, Clear, 40 mL, HCL	
23J0051-02 G	VOA Vial, Clear, 40 mL, HCL	
23J0051-02 H	VOA Vial, Clear, 40 mL, HCL	
23J0051-03 A	Glass NM, Amber, 1000 mL	
23J0051-03 B	Glass NM, Amber, 1000 mL	
23J0051-03 C	HDPE NM, 500 mL, 1:1 HNO3	<2 pass
23J0051-03 D	VOA Vial, Clear, 40 mL, HCL	
23J0051-03 E	VOA Vial, Clear, 40 mL, HCL	
23J0051-03 F	VOA Vial, Clear, 40 mL, HCL	
23J0051-03 G	VOA Vial, Clear, 40 mL, HCL	
23J0051-03 H	VOA Vial, Clear, 40 mL, HCL	
23J0051-04 A	Glass NM, Amber, 1000 mL	
23J0051-04 B	Glass NM, Amber, 1000 mL	
23J0051-04 C	Glass NM, Amber, 1000 mL	
23J0051-04 D	Glass NM, Amber, 1000 mL	
23J0051-04 E	Glass NM, Amber, 1000 mL	
23J0051-04 F	Glass NM, Amber, 1000 mL	
23J0051-04 G	Glass NM, Amber, 1000 mL	
23J0051-04 H	HDPE NM, 500 mL, 1:1 HNO3	<2 pass
23J0051-04 I	HDPE NM, 500 mL, 1:1 HNO3	<2 pass
23J0051-04 J	HDPE NM, 500 mL, 1:1 HNO3	<2 pass

Reviewed By

Date

WORK ORDER

23J0051

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: Golder Associates | **Project Manager: Kelly Bottem**

Project: Landsburg | **Project Number: GL9231000007.2023**

23J0051-04 K	VOA Vial, Clear, 40 mL, HCL	
23J0051-04 L	VOA Vial, Clear, 40 mL, HCL	
23J0051-04 M	VOA Vial, Clear, 40 mL, HCL	
23J0051-04 N	VOA Vial, Clear, 40 mL, HCL	
23J0051-04 O	VOA Vial, Clear, 40 mL, HCL	
23J0051-04 P	VOA Vial, Clear, 40 mL, HCL	
23J0051-04 Q	VOA Vial, Clear, 40 mL, HCL	
23J0051-04 R	VOA Vial, Clear, 40 mL, HCL	
23J0051-04 S	VOA Vial, Clear, 40 mL, HCL	
23J0051-04 T	VOA Vial, Clear, 40 mL, HCL	
23J0051-04 U	VOA Vial, Clear, 40 mL, HCL	
23J0051-05 A	Glass NM, Amber, 1000 mL	
23J0051-05 B	Glass NM, Amber, 1000 mL	
23J0051-05 C	HDPE NM, 500 mL, 1:1 HNO3	<2 pass
23J0051-05 D	VOA Vial, Clear, 40 mL, HCL	
23J0051-05 E	VOA Vial, Clear, 40 mL, HCL	
23J0051-05 F	VOA Vial, Clear, 40 mL, HCL	
23J0051-05 G	VOA Vial, Clear, 40 mL, HCL	
23J0051-05 H	VOA Vial, Clear, 40 mL, HCL	
23J0051-06 A	Glass NM, Amber, 1000 mL	
23J0051-06 B	Glass NM, Amber, 1000 mL	
23J0051-06 C	HDPE NM, 500 mL, 1:1 HNO3	<2 pass
23J0051-06 D	VOA Vial, Clear, 40 mL, HCL	
23J0051-06 E	VOA Vial, Clear, 40 mL, HCL	
23J0051-06 F	VOA Vial, Clear, 40 mL, HCL	
23J0051-06 G	VOA Vial, Clear, 40 mL, HCL	
23J0051-06 H	VOA Vial, Clear, 40 mL, HCL	
23J0051-07 A	Glass NM, Amber, 1000 mL	
23J0051-07 B	Glass NM, Amber, 1000 mL	
23J0051-07 C	HDPE NM, 500 mL, 1:1 HNO3	<2 pass
23J0051-07 D	VOA Vial, Clear, 40 mL, HCL	
23J0051-07 E	VOA Vial, Clear, 40 mL, HCL	
23J0051-07 F	VOA Vial, Clear, 40 mL, HCL	
23J0051-07 G	VOA Vial, Clear, 40 mL, HCL	
23J0051-07 H	VOA Vial, Clear, 40 mL, HCL	
23J0051-08 A	Glass NM, Amber, 1000 mL	

Reviewed By

Date

WORK ORDER

23J0051

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: Golder Associates | **Project Manager: Kelly Bottem**

Project: Landsburg | **Project Number: GL9231000007.2023**

23J0051-08 B	Glass NM, Amber, 1000 mL	
23J0051-08 C	HDPE NM, 500 mL, 1:1 HNO3	LZ pass
23J0051-08 D	VOA Vial, Clear, 40 mL, HCL	
23J0051-08 E	VOA Vial, Clear, 40 mL, HCL	
23J0051-08 F	VOA Vial, Clear, 40 mL, HCL	
23J0051-08 G	VOA Vial, Clear, 40 mL, HCL	
23J0051-08 H	VOA Vial, Clear, 40 mL, HCL	
23J0051-09 A	Glass NM, Amber, 1000 mL	
23J0051-09 B	Glass NM, Amber, 1000 mL	
23J0051-09 C	HDPE NM, 500 mL, 1:1 HNO3	LZ pass
23J0051-09 D	VOA Vial, Clear, 40 mL, HCL	
23J0051-09 E	VOA Vial, Clear, 40 mL, HCL	
23J0051-09 F	VOA Vial, Clear, 40 mL, HCL	
23J0051-09 G	VOA Vial, Clear, 40 mL, HCL	
23J0051-09 H	VOA Vial, Clear, 40 mL, HCL	
23J0051-10 A	Glass NM, Amber, 1000 mL	
23J0051-10 B	Glass NM, Amber, 1000 mL	
23J0051-10 C	HDPE NM, 500 mL, 1:1 HNO3	LZ pass
23J0051-10 D	VOA Vial, Clear, 40 mL, HCL	
23J0051-10 E	VOA Vial, Clear, 40 mL, HCL	
23J0051-10 F	VOA Vial, Clear, 40 mL, HCL	
23J0051-10 G	VOA Vial, Clear, 40 mL, HCL	
23J0051-10 H	VOA Vial, Clear, 40 mL, HCL	
23J0051-11 A	Glass NM, Amber, 1000 mL	
23J0051-11 B	Glass NM, Amber, 1000 mL	
23J0051-11 C	HDPE NM, 500 mL, 1:1 HNO3	LZ pass
23J0051-11 D	VOA Vial, Clear, 40 mL, HCL	
23J0051-11 E	VOA Vial, Clear, 40 mL, HCL	
23J0051-11 F	VOA Vial, Clear, 40 mL, HCL	
23J0051-11 G	VOA Vial, Clear, 40 mL, HCL	
23J0051-11 H	VOA Vial, Clear, 40 mL, HCL	
23J0051-12 A	VOA Vial, Clear, 40 mL, HCL	
23J0051-12 B	VOA Vial, Clear, 40 mL, HCL	
23J0051-12 C	VOA Vial, Clear, 40 mL, HCL	
23J0051-12 D	VOA Vial, Clear, 40 mL, HCL	

Reviewed By

Date

WORK ORDER

23J0051

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: Golder Associates | **Project Manager:** Kelly Bottem

Project: Landsburg | **Project Number:** GL9231000007.2023

MD
Preservation Confirmed By

10/03/23
Date

Reviewed By

Date

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-12-0923

23J0051-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 10:35

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 15:44

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0051-01 D

Preparation Batch: BLJ0118 — Sample Size: 10 mL

Prepared: 10/04/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	0.29	ug/L	
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-12-0923

23J0051-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 10:35

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 15:44

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-12-0923

23J0051-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 10:35

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 15:44

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*99.5*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*88.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*103*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-12-0923

23J0051-01 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/26/2023 10:35

Instrument: FID4 Analyst: AA — Analyzed: 10/04/2023 16:37

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0051-01 A 01

Preparation Batch: BLJ0085 — Sample Size: 500 mL

Prepared: 10/03/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*71.9*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*115*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-12-0923

23J0051-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/26/2023 10:35

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/30/2023 19:23

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-01 C 01

Preparation Batch: BLJ0443 — Sample Size: 25 mL

Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-12-0923

23J0051-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/26/2023 10:35

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 01:39

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-01 C 01

Preparation Batch: BLJ0443 — Sample Size: 25 mL

Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-12-0923

23J0051-01 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/26/2023 10:35

Instrument: ICP3 Analyst: DOE — Analyzed: 10/17/2023 10:19

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0051-01 C 02

Preparation Batch: BLJ0480 — Sample Size: 25 mL

Prepared: 10/16/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	62.6	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	16.4	mg/L	
Magnesium	7439-95-4	1	0.500	39.7	mg/L	
Manganese	7439-96-5	1	0.0100	0.952	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	3.07	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	8.60	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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LMW-12-0923

23J0051-01 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/26/2023 10:35

Instrument: HYDRA Analyst: ML — Analyzed: 10/06/2023 12:48

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0051-01 C

Preparation Batch: BLJ0129 — Sample Size: 20 mL

Prepared: 10/04/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
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LMW-13R-0923

23J0051-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 11:40

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 16:07

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0051-02 D

Preparation Batch: BLJ0118 — Sample Size: 10 mL

Prepared: 10/04/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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23J0051-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 11:40

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 16:07

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*101*	*%*	

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23J0051-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 11:40

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 16:07

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*87.8*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*99.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*103*	*%*	

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23J0051-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/26/2023 11:40
Instrument: FID4 Analyst: AA — Analyzed: 10/04/2023 16:57

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0051-02 A 01
Preparation Batch: BLJ0085 — Sample Size: 500 mL
Prepared: 10/03/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*88.8*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*140*	*%*	

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23J0051-02 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/26/2023 11:40
Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/30/2023 19:27

Sample Preparation: Preparation Method: REN - EPA 3010A M
Preparation Batch: BLJ0443
Prepared: 10/13/2023
Sample Size: 25 mL
Final Volume: 25 mL
Extract ID: 23J0051-02 C 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

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23J0051-02 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/26/2023 11:40

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 01:43

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-02 C 01

Preparation Batch: BLJ0443 — Sample Size: 25 mL

Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

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23J0051-02 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/26/2023 11:40

Instrument: ICP3 Analyst: DOE — Analyzed: 10/17/2023 10:22

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0051-02 C 02

Preparation Batch: BLJ0480 — Sample Size: 25 mL

Prepared: 10/16/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	88.7	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	0.710	mg/L	
Magnesium	7439-95-4	1	0.500	41.8	mg/L	
Manganese	7439-96-5	1	0.0100	0.0324	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	3.14	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	50.0	78.7	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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23J0051-02 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/26/2023 11:40

Instrument: HYDRA Analyst: ML — Analyzed: 10/06/2023 12:50

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0051-02 C

Preparation Batch: BLJ0129 — Sample Size: 20 mL

Prepared: 10/04/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

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LMW-10-0923

23J0051-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 12:47

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 16:31

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0051-03 D

Preparation Batch: BLJ0118 — Sample Size: 10 mL

Prepared: 10/04/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	0.21	ug/L	
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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23J0051-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 12:47

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 16:31

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*102*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-10-0923

23J0051-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 12:47

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 16:31

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*99.5*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*95.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*106*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-10-0923

23J0051-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/26/2023 12:47

Instrument: FID4 Analyst: AA — Analyzed: 10/04/2023 17:17

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0051-03 A 01

Preparation Batch: BLJ0085 — Sample Size: 500 mL

Prepared: 10/03/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*87.8*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*136*	*%*	

Analytical Resources, LLC
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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-10-0923

23J0051-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/26/2023 12:47

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/30/2023 19:49

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-03 C 01

Preparation Batch: BLJ0443 — Sample Size: 25 mL

Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-10-0923

23J0051-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/26/2023 12:47

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 02:13

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-03 C 01

Preparation Batch: BLJ0443 — Sample Size: 25 mL

Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-10-0923

23J0051-03 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/26/2023 12:47

Instrument: ICP3 Analyst: DOE — Analyzed: 10/17/2023 10:44

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0051-03 C 02

Preparation Batch: BLJ0480 — Sample Size: 25 mL

Prepared: 10/16/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	6.58	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	ND	mg/L	U
Magnesium	7439-95-4	1	0.500	2.90	mg/L	
Manganese	7439-96-5	1	0.0100	0.0100	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	1.18	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	50.0	84.4	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-10-0923

23J0051-03 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/26/2023 12:47

Instrument: HYDRA Analyst: ML — Analyzed: 10/06/2023 12:53

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0051-03 C

Preparation Batch: BLJ0129 — Sample Size: 20 mL

Prepared: 10/04/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-4-0923

23J0051-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 14:30

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 16:54

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0051-04 K

Preparation Batch: BLJ0118 — Sample Size: 10 mL

Prepared: 10/04/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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LMW-4-0923

23J0051-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 14:30

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 16:54

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	

Golder Associates	Project: Landsburg	
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23J0051-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 14:30

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 16:54

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*87.3*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*94.6*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*104*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
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LMW-4-0923

23J0051-04 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 09/26/2023 14:30
Instrument: NT6 Analyst: JZ — Analyzed: 10/09/2023 21:41

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 23J0051-04 A 01
Preparation Batch: BLJ0084 — Sample Size: 500 mL
Prepared: 10/03/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	1.9	ug/L	
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*81.2*	*%*	

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Golder Associates	Project: Landsburg	
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LMW-4-0923

23J0051-04 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/26/2023 14:30
Instrument: FID4 Analyst: AA — Analyzed: 10/04/2023 17:37

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0051-04 C 01
Preparation Batch: BLJ0085 — Sample Size: 500 mL
Prepared: 10/03/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*85.6*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*133*	*%*	

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-4-0923

23J0051-04 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/26/2023 14:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/13/2023 23:51

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-04 H 01
Preparation Batch: BLJ0443 — Sample Size: 25 mL
Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
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LMW-4-0923

23J0051-04 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/26/2023 14:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 02:32

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-04 H 01
Preparation Batch: BLJ0443 — Sample Size: 25 mL
Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
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LMW-4-0923

23J0051-04 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/26/2023 14:30
Instrument: ICP3 Analyst: DOE — Analyzed: 10/17/2023 09:42

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0051-04 H 02
Preparation Batch: BLJ0480 — Sample Size: 25 mL
Prepared: 10/16/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	105	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	1.30	mg/L	
Magnesium	7439-95-4	1	0.500	63.1	mg/L	
Manganese	7439-96-5	1	0.0100	0.125	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	3.75	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	42.1	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
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LMW-4-0923

23J0051-04 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/26/2023 14:30
Instrument: HYDRA Analyst: ML — Analyzed: 10/06/2023 12:29

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0051-04 H
Preparation Batch: BLJ0129 — Sample Size: 20 mL
Prepared: 10/04/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-2-0923

23J0051-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 16:10

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 17:17

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0051-05 D

Preparation Batch: BLJ0118 — Sample Size: 10 mL

Prepared: 10/04/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-2-0923

23J0051-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 16:10

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 17:17

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	

Golder Associates	Project: Landsburg	
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LMW-2-0923

23J0051-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 16:10

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 17:17

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*87.5*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*94.0*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*106*	*%*	

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Golder Associates	Project: Landsburg	
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LMW-2-0923

23J0051-05 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/26/2023 16:10
Instrument: FID4 Analyst: AA — Analyzed: 10/04/2023 17:58

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0051-05 A 01
Preparation Batch: BLJ0085 — Sample Size: 500 mL
Prepared: 10/03/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*82.2*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*131*	*%*	

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LMW-2-0923

23J0051-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/26/2023 16:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/30/2023 19:53

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-05 C 01
Preparation Batch: BLJ0443 — Sample Size: 25 mL
Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

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Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-2-0923

23J0051-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/26/2023 16:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 02:16

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-05 C 01
Preparation Batch: BLJ0443 — Sample Size: 25 mL
Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
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LMW-2-0923

23J0051-05 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/26/2023 16:10

Instrument: ICP3 Analyst: DOE — Analyzed: 10/17/2023 10:47

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0051-05 C 02

Preparation Batch: BLJ0480 — Sample Size: 25 mL

Prepared: 10/16/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	119	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	ND	mg/L	U
Magnesium	7439-95-4	1	0.500	73.5	mg/L	
Manganese	7439-96-5	1	0.0100	0.234	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	3.62	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	20.7	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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LMW-2-0923

23J0051-05 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/26/2023 16:10

Instrument: HYDRA Analyst: ML — Analyzed: 10/06/2023 12:55

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0051-05 C

Preparation Batch: BLJ0129 — Sample Size: 20 mL

Prepared: 10/04/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

Golder Associates	Project: Landsburg	
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LMW-2-0923-D

23J0051-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 16:20

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 17:40

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0051-06 E

Preparation Batch: BLJ0118 — Sample Size: 10 mL

Prepared: 10/04/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
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LMW-2-0923-D

23J0051-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 16:20

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 17:40

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	

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23J0051-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 16:20

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 17:40

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*86.7*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*93.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*104*	*%*	

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23J0051-06 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/26/2023 16:20

Instrument: FID4 Analyst: AA — Analyzed: 10/04/2023 18:18

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0051-06 A 01

Preparation Batch: BLJ0085 — Sample Size: 500 mL

Prepared: 10/03/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*69.7*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*110*	*%*	

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LMW-2-0923-D

23J0051-06 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/26/2023 16:20

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/30/2023 19:57

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-06 C 01

Preparation Batch: BLJ0443 — Sample Size: 25 mL

Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

Golder Associates	Project: Landsburg	
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LMW-2-0923-D

23J0051-06 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/26/2023 16:20

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 02:20

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-06 C 01

Preparation Batch: BLJ0443 — Sample Size: 25 mL

Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

Golder Associates	Project: Landsburg	
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LMW-2-0923-D

23J0051-06 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/26/2023 16:20
Instrument: ICP3 Analyst: DOE — Analyzed: 10/17/2023 10:50

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0051-06 C 02
Preparation Batch: BLJ0480 — Sample Size: 25 mL
Prepared: 10/16/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	118	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	ND	mg/L	U
Magnesium	7439-95-4	1	0.500	72.3	mg/L	
Manganese	7439-96-5	1	0.0100	0.229	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	3.59	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	20.4	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

Analytical Resources, LLC
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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-2-0923-D

23J0051-06 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/26/2023 16:20

Instrument: HYDRA Analyst: ML — Analyzed: 10/06/2023 12:57

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0051-06 C

Preparation Batch: BLJ0129 — Sample Size: 20 mL

Prepared: 10/04/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-3-0923

23J0051-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/27/2023 10:45

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 18:04

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0051-07 E

Preparation Batch: BLJ0118 — Sample Size: 10 mL

Prepared: 10/04/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-3-0923

23J0051-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/27/2023 10:45

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 18:04

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*107*	*%*	

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-3-0923

23J0051-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/27/2023 10:45

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 18:04

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*98.4*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*93.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*105*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-3-0923

23J0051-07 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/27/2023 10:45
Instrument: FID4 Analyst: AA — Analyzed: 10/04/2023 18:38

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0051-07 A 01
Preparation Batch: BLJ0085 — Sample Size: 500 mL
Prepared: 10/03/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*89.8*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*142*	*%*	

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
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23J0051-07 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/27/2023 10:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/30/2023 20:00

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-07 C 01
Preparation Batch: BLJ0443 — Sample Size: 25 mL
Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-3-0923

23J0051-07 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/27/2023 10:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 02:24

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-07 C 01
Preparation Batch: BLJ0443 — Sample Size: 25 mL
Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-3-0923

23J0051-07 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/27/2023 10:45
Instrument: ICP3 Analyst: DOE — Analyzed: 10/17/2023 10:53

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0051-07 C 02
Preparation Batch: BLJ0480 — Sample Size: 25 mL
Prepared: 10/16/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	36.6	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	ND	mg/L	U
Magnesium	7439-95-4	1	0.500	15.5	mg/L	
Manganese	7439-96-5	1	0.0100	0.0157	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	1.61	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	10.2	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-3-0923

23J0051-07 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/27/2023 10:45

Instrument: HYDRA Analyst: ML — Analyzed: 10/06/2023 13:00

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0051-07 C

Preparation Batch: BLJ0129 — Sample Size: 20 mL

Prepared: 10/04/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-5-0923

23J0051-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/27/2023 11:45

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 18:27

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0051-08 F

Preparation Batch: BLJ0118 — Sample Size: 10 mL

Prepared: 10/04/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-5-0923

23J0051-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/27/2023 11:45

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 18:27

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*109*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-5-0923

23J0051-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/27/2023 11:45

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 18:27

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*98.5*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*91.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*106*	*%*	

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-5-0923

23J0051-08 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/27/2023 11:45
Instrument: FID4 Analyst: AA — Analyzed: 10/04/2023 18:58

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0051-08 A 01
Preparation Batch: BLJ0085 — Sample Size: 500 mL
Prepared: 10/03/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*64.3*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*99.4*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-5-0923

23J0051-08 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/27/2023 11:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/30/2023 20:04

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-08 C 01
Preparation Batch: BLJ0443 — Sample Size: 25 mL
Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-5-0923

23J0051-08 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/27/2023 11:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 02:28

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-08 C 01
Preparation Batch: BLJ0443 — Sample Size: 25 mL
Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-5-0923

23J0051-08 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/27/2023 11:45
Instrument: ICP3 Analyst: DOE — Analyzed: 10/17/2023 10:56

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0051-08 C 02
Preparation Batch: BLJ0480 — Sample Size: 25 mL
Prepared: 10/16/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	79.1	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	0.417	mg/L	
Magnesium	7439-95-4	1	0.500	43.3	mg/L	
Manganese	7439-96-5	1	0.0100	0.201	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	2.38	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	14.1	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-5-0923

23J0051-08 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/27/2023 11:45
Instrument: HYDRA Analyst: ML — Analyzed: 10/06/2023 13:02

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0051-08 C
Preparation Batch: BLJ0129 — Sample Size: 20 mL
Prepared: 10/04/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-9-0923

23J0051-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/27/2023 13:05

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 18:50

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0051-09 F

Preparation Batch: BLJ0118 — Sample Size: 10 mL

Prepared: 10/04/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-9-0923

23J0051-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/27/2023 13:05

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 18:50

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*107*	*%*	

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-9-0923

23J0051-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/27/2023 13:05

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 18:50

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*86.4*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*91.6*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*104*	*%*	

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-9-0923

23J0051-09 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/27/2023 13:05
Instrument: FID4 Analyst: AA — Analyzed: 10/04/2023 19:18

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0051-09 A 01
Preparation Batch: BLJ0085 — Sample Size: 500 mL
Prepared: 10/03/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*89.7*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*140*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-9-0923

23J0051-09 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/27/2023 13:05
Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/30/2023 20:07

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-09 C 01
Preparation Batch: BLJ0443 — Sample Size: 25 mL
Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-9-0923

23J0051-09 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/27/2023 13:05
Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 03:31

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-09 C 01
Preparation Batch: BLJ0443 — Sample Size: 25 mL
Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-9-0923

23J0051-09 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/27/2023 13:05
Instrument: ICP3 Analyst: DOE — Analyzed: 10/17/2023 10:59

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0051-09 C 02
Preparation Batch: BLJ0480 — Sample Size: 25 mL
Prepared: 10/16/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	77.0	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	1.43	mg/L	
Magnesium	7439-95-4	1	0.500	41.4	mg/L	
Manganese	7439-96-5	1	0.0100	0.168	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	2.26	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	14.0	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-9-0923

23J0051-09 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/27/2023 13:05
Instrument: HYDRA Analyst: ML — Analyzed: 10/06/2023 13:04

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0051-09 C
Preparation Batch: BLJ0129 — Sample Size: 20 mL
Prepared: 10/04/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-8-0923

23J0051-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/27/2023 14:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/04/2023 14:21

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0051-10 D

Preparation Batch: BLJ0126 — Sample Size: 10 mL

Prepared: 10/04/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-8-0923

23J0051-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/27/2023 14:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/04/2023 14:21

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*118*	*%*	

Golder Associates	Project: Landsburg	
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LMW-8-0923

23J0051-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/27/2023 14:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/04/2023 14:21

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*98.8*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*103*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*106*	*%*	

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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-8-0923

23J0051-10 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/27/2023 14:15
Instrument: FID4 Analyst: AA — Analyzed: 10/04/2023 19:39

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0051-10 A 01
Preparation Batch: BLJ0085 — Sample Size: 500 mL
Prepared: 10/03/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*90.6*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*142*	*%*	

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LMW-8-0923

23J0051-10 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/27/2023 14:15
Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/30/2023 20:11

Sample Preparation: Preparation Method: REN - EPA 3010A M
Preparation Batch: BLJ0443 — Sample Size: 25 mL
Prepared: 10/13/2023 — Final Volume: 25 mL
Extract ID: 23J0051-10 C 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-8-0923

23J0051-10 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/27/2023 14:15
Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 03:34

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-10 C 01
Preparation Batch: BLJ0443 — Sample Size: 25 mL
Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

LMW-8-0923

23J0051-10 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/27/2023 14:15
Instrument: ICP3 Analyst: DOE — Analyzed: 10/17/2023 11:02

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0051-10 C 02
Preparation Batch: BLJ0480 — Sample Size: 25 mL
Prepared: 10/16/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	71.4	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	13.9	mg/L	
Magnesium	7439-95-4	1	0.500	38.1	mg/L	
Manganese	7439-96-5	1	0.0100	0.480	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	2.11	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	12.6	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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LMW-8-0923

23J0051-10 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/27/2023 14:15

Instrument: HYDRA Analyst: ML — Analyzed: 10/06/2023 13:11

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0051-10 C

Preparation Batch: BLJ0129 — Sample Size: 20 mL

Prepared: 10/04/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

Golder Associates	Project: Landsburg	
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LMW-FB-0923

23J0051-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/27/2023 14:12

Instrument: NT3 Analyst: TWC — Analyzed: 10/04/2023 14:43

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0051-11 D

Preparation Batch: BLJ0126 — Sample Size: 10 mL

Prepared: 10/04/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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23J0051-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/27/2023 14:12

Instrument: NT3 Analyst: TWC — Analyzed: 10/04/2023 14:43

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	

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23J0051-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/27/2023 14:12

Instrument: NT3 Analyst: TWC — Analyzed: 10/04/2023 14:43

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*97.6*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*95.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.8*	*%*	

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LMW-FB-0923

23J0051-11 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/27/2023 14:12

Instrument: FID4 Analyst: AA — Analyzed: 10/04/2023 20:59

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0051-11 A 01

Preparation Batch: BLJ0085 — Sample Size: 500 mL

Prepared: 10/03/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*87.6*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*141*	*%*	

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23J0051-11 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/27/2023 14:12

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/30/2023 20:15

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-11 C 01

Preparation Batch: BLJ0443 — Sample Size: 25 mL

Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

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23J0051-11 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/27/2023 14:12

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 04:06

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0051-11 C 01

Preparation Batch: BLJ0443 — Sample Size: 25 mL

Prepared: 10/13/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

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LMW-FB-0923

23J0051-11 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/27/2023 14:12

Instrument: ICP3 Analyst: DOE — Analyzed: 10/17/2023 11:05

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0051-11 C 02

Preparation Batch: BLJ0480 — Sample Size: 25 mL

Prepared: 10/16/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	ND	mg/L	U
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	ND	mg/L	U
Magnesium	7439-95-4	1	0.500	ND	mg/L	U
Manganese	7439-96-5	1	0.0100	ND	mg/L	U
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	ND	mg/L	U
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	ND	mg/L	U
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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23J0051-11 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/27/2023 14:12

Instrument: HYDRA Analyst: ML — Analyzed: 10/06/2023 13:14

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0051-11 C

Preparation Batch: BLJ0129 — Sample Size: 20 mL

Prepared: 10/04/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

Golder Associates	Project: Landsburg	
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Trip Blank

23J0051-12 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 10:35

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 11:07

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0051-12 B

Preparation Batch: BLJ0118 — Sample Size: 10 mL

Prepared: 10/04/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Trip Blank

23J0051-12 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 10:35

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 11:07

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*95.1*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Trip Blank

23J0051-12 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/26/2023 10:35

Instrument: NT20 Analyst: LH — Analyzed: 10/04/2023 11:07

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*98.8*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*95.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*105*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0118 - EPA 8260D

Instrument: NT20 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0118-BLK1)			Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 10:44							
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.10	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.10	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
2-Chloroethyl vinyl ether	ND	1.00	ug/L							U
4-Methyl-2-Pentanone	ND	2.50	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0118 - EPA 8260D

Instrument: NT20 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0118-BLK1)			Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 10:44							
2-Hexanone	ND	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.10	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.10	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Xylenes, total	ND	0.60	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.25	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.10	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	0.50	ug/L							U
Naphthalene	ND	0.50	ug/L							U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0118 - EPA 8260D

Instrument: NT20 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0118-BLK1)			Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 10:44							
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.73		ug/L	*5.00*		*94.7*	*80-129*			
Surrogate: Toluene-d8	4.37		ug/L	*5.00*		*87.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.92		ug/L	*5.00*		*98.3*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.22		ug/L	*5.00*		*104*	*80-120*			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0118 - EPA 8260D

Instrument: NT20 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLJ0118-BS1)				Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 09:12						
Chloromethane	8.45	0.50	ug/L	10.0		84.5	60-138			
Vinyl Chloride	8.97	0.10	ug/L	10.0		89.7	66-133			
Bromomethane	9.10	1.00	ug/L	10.0		91.0	72-131			
Chloroethane	8.23	0.20	ug/L	10.0		82.3	60-155			
Trichlorofluoromethane	8.62	0.20	ug/L	10.0		86.2	62-141			
Acrolein	46.0	5.00	ug/L	50.0		92.0	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	8.66	0.20	ug/L	10.0		86.6	76-129			
Acetone	47.7	5.00	ug/L	50.0		95.4	58-142			
1,1-Dichloroethene	8.79	0.20	ug/L	10.0		87.9	69-135			
Iodomethane	9.37	1.00	ug/L	10.0		93.7	56-147			
Methylene Chloride	10.0	1.00	ug/L	10.0		100	65-135			
Acrylonitrile	9.22	1.00	ug/L	10.0		92.2	64-134			
Carbon Disulfide	9.95	0.20	ug/L	10.0		99.5	78-125			
trans-1,2-Dichloroethene	8.65	0.20	ug/L	10.0		86.5	78-128			
Vinyl Acetate	10.1	0.20	ug/L	10.0		101	55-138			
1,1-Dichloroethane	8.84	0.20	ug/L	10.0		88.4	76-124			
2-Butanone	46.0	5.00	ug/L	50.0		91.9	61-140			
2,2-Dichloropropane	9.26	0.20	ug/L	10.0		92.6	66-147			
cis-1,2-Dichloroethene	10.4	0.20	ug/L	10.0		104	80-121			
Chloroform	10.3	0.20	ug/L	10.0		103	80-122			
Bromochloromethane	8.82	0.20	ug/L	10.0		88.2	80-121			
1,1,1-Trichloroethane	9.10	0.20	ug/L	10.0		91.0	79-123			
1,1-Dichloropropene	10.4	0.10	ug/L	10.0		104	80-127			
Carbon tetrachloride	9.55	0.20	ug/L	10.0		95.5	53-137			
1,2-Dichloroethane	9.41	0.20	ug/L	10.0		94.1	75-123			
Benzene	10.2	0.20	ug/L	10.0		102	80-120			
Trichloroethene	10.3	0.20	ug/L	10.0		103	80-120			
1,2-Dichloropropane	9.70	0.20	ug/L	10.0		97.0	80-120			
Bromodichloromethane	9.46	0.20	ug/L	10.0		94.6	80-121			
Dibromomethane	9.46	0.20	ug/L	10.0		94.6	80-120			
2-Chloroethyl vinyl ether	9.05	1.00	ug/L	10.0		90.5	64-120			
4-Methyl-2-Pentanone	42.6	2.50	ug/L	50.0		85.2	67-133			
cis-1,3-Dichloropropene	10.7	0.20	ug/L	10.0		107	80-124			
Toluene	10.2	0.20	ug/L	10.0		102	80-120			
trans-1,3-Dichloropropene	9.99	0.20	ug/L	10.0		99.9	71-127			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0118 - EPA 8260D

Instrument: NT20 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLJ0118-BS1)				Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 09:12						
2-Hexanone	51.8	5.00	ug/L	50.0		104	69-133			
1,1,2-Trichloroethane	9.37	0.20	ug/L	10.0		93.7	80-121			
1,3-Dichloropropane	9.76	0.10	ug/L	10.0		97.6	80-120			
Tetrachloroethene	9.96	0.20	ug/L	10.0		99.6	80-120			
Dibromochloromethane	9.70	0.20	ug/L	10.0		97.0	65-135			
1,2-Dibromoethane	9.92	0.10	ug/L	10.0		99.2	80-121			
Chlorobenzene	9.80	0.20	ug/L	10.0		98.0	80-120			
Ethylbenzene	10.6	0.20	ug/L	10.0		106	80-120			
1,1,1,2-Tetrachloroethane	9.58	0.20	ug/L	10.0		95.8	80-120			
m,p-Xylene	22.3	0.40	ug/L	20.0		112	80-121			
o-Xylene	11.4	0.20	ug/L	10.0		114	80-121			
Xylenes, total	33.7	0.60	ug/L	30.0		112	76-127			
Styrene	11.4	0.20	ug/L	10.0		114	80-124			
Bromoform	9.95	0.20	ug/L	10.0		99.5	51-134			
1,1,2,2-Tetrachloroethane	9.84	0.20	ug/L	10.0		98.4	77-123			
1,2,3-Trichloropropane	10.5	0.25	ug/L	10.0		105	76-125			
trans-1,4-Dichloro 2-Butene	10.8	1.00	ug/L	10.0		108	55-129			
n-Propylbenzene	12.2	0.20	ug/L	10.0		122	78-130			Q
Bromobenzene	10.7	0.20	ug/L	10.0		107	80-120			
Isopropyl Benzene	11.5	0.20	ug/L	10.0		115	80-128			
2-Chlorotoluene	11.6	0.10	ug/L	10.0		116	78-122			
4-Chlorotoluene	11.9	0.20	ug/L	10.0		119	80-121			
t-Butylbenzene	12.8	0.20	ug/L	10.0		128	78-125			*, Q
1,3,5-Trimethylbenzene	12.8	0.20	ug/L	10.0		128	80-129			Q
1,2,4-Trimethylbenzene	12.1	0.20	ug/L	10.0		121	80-127			Q
s-Butylbenzene	12.9	0.20	ug/L	10.0		129	78-129			Q
4-Isopropyl Toluene	12.4	0.20	ug/L	10.0		124	79-130			Q
1,3-Dichlorobenzene	11.0	0.20	ug/L	10.0		110	80-120			
1,4-Dichlorobenzene	10.4	0.20	ug/L	10.0		104	80-120			
n-Butylbenzene	12.3	0.20	ug/L	10.0		123	74-129			Q
1,2-Dichlorobenzene	10.5	0.20	ug/L	10.0		105	80-120			
1,2-Dibromo-3-chloropropane	9.96	0.50	ug/L	10.0		99.6	62-123			
1,2,4-Trichlorobenzene	11.9	0.50	ug/L	10.0		119	64-124			
Hexachloro-1,3-Butadiene	11.2	0.50	ug/L	10.0		112	65-145			
Naphthalene	10.8	0.50	ug/L	10.0		108	50-134			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0118 - EPA 8260D

Instrument: NT20 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLJ0118-BS1)				Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 09:12						
1,2,3-Trichlorobenzene	11.8	0.50	ug/L	10.0		118	49-133			
Dichlorodifluoromethane	8.94	0.20	ug/L	10.0		89.4	48-147			
Surrogate: 1,2-Dichloroethane-d4	4.44		ug/L	*5.00*		*88.8*	*80-129*			
Surrogate: Toluene-d8	5.27		ug/L	*5.00*		*105*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.18		ug/L	*5.00*		*104*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.08		ug/L	*5.00*		*102*	*80-120*			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0118 - EPA 8260D

Instrument: NT20 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLJ0118-BSD1)				Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 09:58						
Chloromethane	8.74	0.50	ug/L	10.0		87.4	60-138	3.37	30	
Vinyl Chloride	9.19	0.10	ug/L	10.0		91.9	66-133	2.39	30	
Bromomethane	9.27	1.00	ug/L	10.0		92.7	72-131	1.80	30	
Chloroethane	8.31	0.20	ug/L	10.0		83.1	60-155	1.05	30	
Trichlorofluoromethane	8.81	0.20	ug/L	10.0		88.1	62-141	2.19	30	
Acrolein	46.3	5.00	ug/L	50.0		92.6	52-190	0.71	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	8.76	0.20	ug/L	10.0		87.6	76-129	1.15	30	
Acetone	47.4	5.00	ug/L	50.0		94.8	58-142	0.58	30	
1,1-Dichloroethene	8.89	0.20	ug/L	10.0		88.9	69-135	1.09	30	
Iodomethane	9.63	1.00	ug/L	10.0		96.3	56-147	2.72	30	
Methylene Chloride	10.3	1.00	ug/L	10.0		103	65-135	2.87	30	
Acrylonitrile	9.35	1.00	ug/L	10.0		93.5	64-134	1.35	30	
Carbon Disulfide	10.1	0.20	ug/L	10.0		101	78-125	2.01	30	
trans-1,2-Dichloroethene	8.74	0.20	ug/L	10.0		87.4	78-128	1.05	30	
Vinyl Acetate	10.0	0.20	ug/L	10.0		100	55-138	0.39	30	
1,1-Dichloroethane	9.12	0.20	ug/L	10.0		91.2	76-124	3.07	30	
2-Butanone	46.7	5.00	ug/L	50.0		93.3	61-140	1.51	30	
2,2-Dichloropropane	9.43	0.20	ug/L	10.0		94.3	66-147	1.90	30	
cis-1,2-Dichloroethene	10.6	0.20	ug/L	10.0		106	80-121	2.37	30	
Chloroform	10.4	0.20	ug/L	10.0		104	80-122	0.84	30	
Bromochloromethane	9.15	0.20	ug/L	10.0		91.5	80-121	3.72	30	
1,1,1-Trichloroethane	9.24	0.20	ug/L	10.0		92.4	79-123	1.50	30	
1,1-Dichloropropene	9.27	0.10	ug/L	10.0		92.7	80-127	11.70	30	
Carbon tetrachloride	8.50	0.20	ug/L	10.0		85.0	53-137	11.60	30	
1,2-Dichloroethane	8.46	0.20	ug/L	10.0		84.6	75-123	10.70	30	
Benzene	9.08	0.20	ug/L	10.0		90.8	80-120	11.30	30	
Trichloroethene	9.16	0.20	ug/L	10.0		91.6	80-120	11.80	30	
1,2-Dichloropropane	8.73	0.20	ug/L	10.0		87.3	80-120	10.50	30	
Bromodichloromethane	8.52	0.20	ug/L	10.0		85.2	80-121	10.50	30	
Dibromomethane	8.46	0.20	ug/L	10.0		84.6	80-120	11.10	30	
2-Chloroethyl vinyl ether	8.07	1.00	ug/L	10.0		80.7	64-120	11.50	30	
4-Methyl-2-Pentanone	37.4	2.50	ug/L	50.0		74.8	67-133	13.10	30	
cis-1,3-Dichloropropene	9.55	0.20	ug/L	10.0		95.5	80-124	11.10	30	
Toluene	9.15	0.20	ug/L	10.0		91.5	80-120	10.60	30	
trans-1,3-Dichloropropene	8.80	0.20	ug/L	10.0		88.0	71-127	12.70	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0118 - EPA 8260D

Instrument: NT20 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLJ0118-BSD1)				Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 09:58						
2-Hexanone	52.6	5.00	ug/L	50.0		105	69-133	1.53	30	
1,1,2-Trichloroethane	8.29	0.20	ug/L	10.0		82.9	80-121	12.20	30	
1,3-Dichloropropane	9.98	0.10	ug/L	10.0		99.8	80-120	2.26	30	
Tetrachloroethene	10.0	0.20	ug/L	10.0		100	80-120	0.72	30	
Dibromochloromethane	9.91	0.20	ug/L	10.0		99.1	65-135	2.18	30	
1,2-Dibromoethane	8.84	0.10	ug/L	10.0		88.4	80-121	11.50	30	
Chlorobenzene	10.0	0.20	ug/L	10.0		100	80-120	2.41	30	
Ethylbenzene	10.8	0.20	ug/L	10.0		108	80-120	2.03	30	
1,1,1,2-Tetrachloroethane	9.80	0.20	ug/L	10.0		98.0	80-120	2.20	30	
m,p-Xylene	22.6	0.40	ug/L	20.0		113	80-121	1.22	30	
o-Xylene	11.7	0.20	ug/L	10.0		117	80-121	2.95	30	
Xylenes, total	34.3	0.60	ug/L	30.0		114	76-127	1.81	30	
Styrene	11.9	0.20	ug/L	10.0		119	80-124	4.03	30	
Bromoform	10.1	0.20	ug/L	10.0		101	51-134	1.24	30	
1,1,2,2-Tetrachloroethane	9.90	0.20	ug/L	10.0		99.0	77-123	0.62	30	
1,2,3-Trichloropropane	10.7	0.25	ug/L	10.0		107	76-125	2.13	30	
trans-1,4-Dichloro 2-Butene	10.0	1.00	ug/L	10.0		100	55-129	6.96	30	
n-Propylbenzene	12.3	0.20	ug/L	10.0		123	78-130	1.15	30	Q
Bromobenzene	11.0	0.20	ug/L	10.0		110	80-120	2.31	30	
Isopropyl Benzene	18.2	0.20	ug/L	10.0		182	80-128	45.40	30	*
2-Chlorotoluene	11.9	0.10	ug/L	10.0		119	78-122	2.54	30	
4-Chlorotoluene	12.0	0.20	ug/L	10.0		120	80-121	0.64	30	
t-Butylbenzene	13.0	0.20	ug/L	10.0		130	78-125	1.50	30	*, Q
1,3,5-Trimethylbenzene	13.1	0.20	ug/L	10.0		131	80-129	1.80	30	*, Q
1,2,4-Trimethylbenzene	12.3	0.20	ug/L	10.0		123	80-127	1.44	30	Q
s-Butylbenzene	12.9	0.20	ug/L	10.0		129	78-129	0.22	30	Q
4-Isopropyl Toluene	12.4	0.20	ug/L	10.0		124	79-130	0.03	30	Q
1,3-Dichlorobenzene	11.1	0.20	ug/L	10.0		111	80-120	0.80	30	
1,4-Dichlorobenzene	10.6	0.20	ug/L	10.0		106	80-120	1.94	30	
n-Butylbenzene	12.1	0.20	ug/L	10.0		121	74-129	1.29	30	Q
1,2-Dichlorobenzene	10.6	0.20	ug/L	10.0		106	80-120	0.97	30	
1,2-Dibromo-3-chloropropane	10.2	0.50	ug/L	10.0		102	62-123	2.72	30	
1,2,4-Trichlorobenzene	12.0	0.50	ug/L	10.0		120	64-124	0.37	30	
Hexachloro-1,3-Butadiene	11.3	0.50	ug/L	10.0		113	65-145	0.65	30	
Naphthalene	11.0	0.50	ug/L	10.0		110	50-134	2.11	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0118 - EPA 8260D

Instrument: NT20 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLJ0118-BSD1)				Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 09:58						
1,2,3-Trichlorobenzene	11.9	0.50	ug/L	10.0		119	49-133	0.70	30	
Dichlorodifluoromethane	8.89	0.20	ug/L	10.0		88.9	48-147	0.52	30	
Surrogate: 1,2-Dichloroethane-d4	4.54		ug/L	*5.00*		*90.7*	*80-129*			
Surrogate: Toluene-d8	4.62		ug/L	*5.00*		*92.4*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.21		ug/L	*5.00*		*104*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.08		ug/L	*5.00*		*102*	*80-120*			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0118 - EPA 8260D

Instrument: NT20 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BLJ0118-MS1)	**Source: 23J0051-04**		Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 20:00							
Chloromethane	8.59	0.50	ug/L	10.0	ND	85.9	60-138			
Vinyl Chloride	8.78	0.10	ug/L	10.0	ND	87.8	66-133			
Bromomethane	8.97	1.00	ug/L	10.0	ND	89.7	72-131			
Chloroethane	8.83	0.20	ug/L	10.0	ND	88.3	60-155			
Trichlorofluoromethane	8.20	0.20	ug/L	10.0	ND	82.0	62-141			
Acrolein	12.0	5.00	ug/L	50.0	ND	24.1	52-190			*
1,1,2-Trichloro-1,2,2-Trifluoroethane	7.89	0.20	ug/L	10.0	ND	78.9	76-129			
Acetone	51.6	5.00	ug/L	50.0	ND	103	58-142			
1,1-Dichloroethene	8.79	0.20	ug/L	10.0	ND	87.9	69-135			
Iodomethane	9.32	1.00	ug/L	10.0	ND	93.2	56-147			
Methylene Chloride	10.7	1.00	ug/L	10.0	ND	101	65-135			
Acrylonitrile	9.80	1.00	ug/L	10.0	ND	98.0	64-134			
Carbon Disulfide	9.72	0.20	ug/L	10.0	ND	97.2	78-125			
trans-1,2-Dichloroethene	8.49	0.20	ug/L	10.0	ND	84.9	78-128			
Vinyl Acetate	7.53	0.20	ug/L	10.0	ND	75.3	55-138			
1,1-Dichloroethane	8.96	0.20	ug/L	10.0	ND	89.6	76-124			
2-Butanone	48.7	5.00	ug/L	50.0	ND	97.4	61-140			
2,2-Dichloropropane	7.11	0.20	ug/L	10.0	ND	71.1	66-147			
cis-1,2-Dichloroethene	10.2	0.20	ug/L	10.0	ND	102	80-121			
Chloroform	10.1	0.20	ug/L	10.0	ND	101	80-122			
Bromochloromethane	8.86	0.20	ug/L	10.0	ND	88.6	80-121			
1,1,1-Trichloroethane	8.77	0.20	ug/L	10.0	ND	87.7	79-123			
1,1-Dichloropropene	9.73	0.10	ug/L	10.0	ND	97.3	80-127			
Carbon tetrachloride	9.05	0.20	ug/L	10.0	ND	90.5	53-137			
1,2-Dichloroethane	9.48	0.20	ug/L	10.0	ND	94.8	75-123			
Benzene	9.99	0.20	ug/L	10.0	ND	99.9	80-120			
Trichloroethene	9.87	0.20	ug/L	10.0	ND	98.7	80-120			
1,2-Dichloropropane	9.72	0.20	ug/L	10.0	ND	97.2	80-120			
Bromodichloromethane	9.40	0.20	ug/L	10.0	ND	94.0	80-121			
Dibromomethane	11.7	0.20	ug/L	10.0	ND	117	80-120			
2-Chloroethyl vinyl ether	ND	1.00	ug/L	10.0	ND		64-120			*, U
4-Methyl-2-Pentanone	43.5	2.50	ug/L	50.0	ND	86.9	67-133			
cis-1,3-Dichloropropene	9.65	0.20	ug/L	10.0	ND	96.5	80-124			
Toluene	9.92	0.20	ug/L	10.0	ND	99.2	80-120			
trans-1,3-Dichloropropene	9.70	0.20	ug/L	10.0	ND	97.0	71-127			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0118 - EPA 8260D

Instrument: NT20 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BLJ0118-MS1)	**Source: 23J0051-04**		Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 20:00							
2-Hexanone	52.0	5.00	ug/L	50.0	ND	104	69-133			
1,1,2-Trichloroethane	9.32	0.20	ug/L	10.0	ND	93.2	80-121			
1,3-Dichloropropane	9.56	0.10	ug/L	10.0	ND	95.6	80-120			
Tetrachloroethene	8.87	0.20	ug/L	10.0	ND	88.7	80-120			
Dibromochloromethane	9.30	0.20	ug/L	10.0	ND	93.0	65-135			
1,2-Dibromoethane	9.91	0.10	ug/L	10.0	ND	99.1	80-121			
Chlorobenzene	9.34	0.20	ug/L	10.0	ND	93.4	80-120			
Ethylbenzene	9.91	0.20	ug/L	10.0	ND	99.1	80-120			
1,1,1,2-Tetrachloroethane	9.17	0.20	ug/L	10.0	ND	91.7	80-120			
m,p-Xylene	20.8	0.40	ug/L	20.0	ND	104	80-121			
o-Xylene	10.5	0.20	ug/L	10.0	ND	105	80-121			
Xylenes, total	31.4	0.60	ug/L	30.0	ND	105	76-127			
Styrene	10.7	0.20	ug/L	10.0	ND	107	80-124			
Bromoform	9.15	0.20	ug/L	10.0	ND	91.5	51-134			
1,1,2,2-Tetrachloroethane	9.45	0.20	ug/L	10.0	ND	94.5	77-123			
1,2,3-Trichloropropane	10.3	0.25	ug/L	10.0	ND	103	76-125			
trans-1,4-Dichloro 2-Butene	8.55	1.00	ug/L	10.0	ND	85.5	55-129			
n-Propylbenzene	10.7	0.20	ug/L	10.0	ND	107	78-130			Q
Bromobenzene	9.80	0.20	ug/L	10.0	ND	98.0	80-120			
Isopropyl Benzene	15.6	0.20	ug/L	10.0	ND	156	80-128			*
2-Chlorotoluene	10.4	0.10	ug/L	10.0	ND	104	78-122			
4-Chlorotoluene	10.5	0.20	ug/L	10.0	ND	105	80-121			
t-Butylbenzene	11.2	0.20	ug/L	10.0	ND	112	78-125			Q
1,3,5-Trimethylbenzene	11.2	0.20	ug/L	10.0	ND	112	80-129			Q
1,2,4-Trimethylbenzene	10.7	0.20	ug/L	10.0	ND	107	80-127			Q
s-Butylbenzene	11.2	0.20	ug/L	10.0	ND	112	78-129			Q
4-Isopropyl Toluene	10.6	0.20	ug/L	10.0	ND	106	79-130			Q
1,3-Dichlorobenzene	9.82	0.20	ug/L	10.0	ND	98.2	80-120			
1,4-Dichlorobenzene	9.40	0.20	ug/L	10.0	ND	94.0	80-120			
n-Butylbenzene	10.2	0.20	ug/L	10.0	ND	102	74-129			Q
1,2-Dichlorobenzene	9.59	0.20	ug/L	10.0	ND	95.9	80-120			
1,2-Dibromo-3-chloropropane	9.67	0.50	ug/L	10.0	ND	96.7	62-123			
1,2,4-Trichlorobenzene	10.3	0.50	ug/L	10.0	ND	103	64-124			
Hexachloro-1,3-Butadiene	9.45	0.50	ug/L	10.0	ND	94.5	65-145			
Naphthalene	10.0	0.50	ug/L	10.0	ND	100	50-134			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0118 - EPA 8260D

Instrument: NT20 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BLJ0118-MS1)	**Source: 23J0051-04**		Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 20:00							
1,2,3-Trichlorobenzene	10.3	0.50	ug/L	10.0	ND	103	49-133			
Dichlorodifluoromethane	8.04	0.20	ug/L	10.0	ND	80.4	48-147			
Surrogate: 1,2-Dichloroethane-d4	4.70		ug/L	*5.00*	*5.16*	*93.9*	*80-129*			
Surrogate: Toluene-d8	5.32		ug/L	*5.00*	*4.37*	*106*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.13		ug/L	*5.00*	*4.73*	*103*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.93		ug/L	*5.00*	*5.22*	*98.6*	*80-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0118 - EPA 8260D

Instrument: NT20 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BLJ0118-MSD1)	**Source: 23J0051-04**		Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 20:23							
Chloromethane	8.54	0.50	ug/L	10.0	ND	85.4	60-138	0.60	30	
Vinyl Chloride	8.65	0.10	ug/L	10.0	ND	86.5	66-133	1.53	30	
Bromomethane	8.70	1.00	ug/L	10.0	ND	87.0	72-131	3.08	30	
Chloroethane	8.25	0.20	ug/L	10.0	ND	82.5	60-155	6.76	30	
Trichlorofluoromethane	8.05	0.20	ug/L	10.0	ND	80.5	62-141	1.81	30	
Acrolein	12.6	5.00	ug/L	50.0	ND	25.2	52-190	4.58	30	*
1,1,2-Trichloro-1,2,2-Trifluoroethane	7.77	0.20	ug/L	10.0	ND	77.7	76-129	1.51	30	
Acetone	51.6	5.00	ug/L	50.0	ND	103	58-142	0.10	30	
1,1-Dichloroethene	8.67	0.20	ug/L	10.0	ND	86.7	69-135	1.29	30	
Iodomethane	9.16	1.00	ug/L	10.0	ND	91.6	56-147	1.75	30	
Methylene Chloride	10.5	1.00	ug/L	10.0	ND	98.3	65-135	2.23	30	
Acrylonitrile	9.52	1.00	ug/L	10.0	ND	95.2	64-134	2.89	30	
Carbon Disulfide	9.68	0.20	ug/L	10.0	ND	96.8	78-125	0.44	30	
trans-1,2-Dichloroethene	8.51	0.20	ug/L	10.0	ND	85.1	78-128	0.22	30	
Vinyl Acetate	7.30	0.20	ug/L	10.0	ND	73.0	55-138	3.12	30	
1,1-Dichloroethane	8.83	0.20	ug/L	10.0	ND	88.3	76-124	1.41	30	
2-Butanone	47.6	5.00	ug/L	50.0	ND	95.2	61-140	2.28	30	
2,2-Dichloropropane	6.93	0.20	ug/L	10.0	ND	69.3	66-147	2.50	30	
cis-1,2-Dichloroethene	10.3	0.20	ug/L	10.0	ND	103	80-121	0.22	30	
Chloroform	10.0	0.20	ug/L	10.0	ND	100	80-122	0.41	30	
Bromochloromethane	8.82	0.20	ug/L	10.0	ND	88.2	80-121	0.37	30	
1,1,1-Trichloroethane	8.69	0.20	ug/L	10.0	ND	86.9	79-123	0.91	30	
1,1-Dichloropropene	9.75	0.10	ug/L	10.0	ND	97.5	80-127	0.20	30	
Carbon tetrachloride	9.05	0.20	ug/L	10.0	ND	90.5	53-137	0.06	30	
1,2-Dichloroethane	9.42	0.20	ug/L	10.0	ND	94.2	75-123	0.61	30	
Benzene	9.93	0.20	ug/L	10.0	ND	99.3	80-120	0.55	30	
Trichloroethene	9.67	0.20	ug/L	10.0	ND	96.7	80-120	2.08	30	
1,2-Dichloropropane	9.56	0.20	ug/L	10.0	ND	95.6	80-120	1.63	30	
Bromodichloromethane	9.41	0.20	ug/L	10.0	ND	94.1	80-121	0.10	30	
Dibromomethane	9.43	0.20	ug/L	10.0	ND	94.3	80-120	21.60	30	
2-Chloroethyl vinyl ether	ND	1.00	ug/L	10.0	ND		64-120			*, U
4-Methyl-2-Pentanone	42.8	2.50	ug/L	50.0	ND	85.6	67-133	1.57	30	
cis-1,3-Dichloropropene	9.64	0.20	ug/L	10.0	ND	96.4	80-124	0.09	30	
Toluene	9.91	0.20	ug/L	10.0	ND	99.1	80-120	0.09	30	
trans-1,3-Dichloropropene	9.39	0.20	ug/L	10.0	ND	93.9	71-127	3.23	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0118 - EPA 8260D

Instrument: NT20 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BLJ0118-MSD1)	**Source: 23J0051-04**		Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 20:23							
2-Hexanone	51.0	5.00	ug/L	50.0	ND	102	69-133	1.89	30	
1,1,2-Trichloroethane	9.27	0.20	ug/L	10.0	ND	92.7	80-121	0.58	30	
1,3-Dichloropropane	9.61	0.10	ug/L	10.0	ND	96.1	80-120	0.51	30	
Tetrachloroethene	8.94	0.20	ug/L	10.0	ND	89.4	80-120	0.83	30	
Dibromochloromethane	9.21	0.20	ug/L	10.0	ND	92.1	65-135	0.93	30	
1,2-Dibromoethane	9.89	0.10	ug/L	10.0	ND	98.9	80-121	0.19	30	
Chlorobenzene	9.29	0.20	ug/L	10.0	ND	92.9	80-120	0.58	30	
Ethylbenzene	9.80	0.20	ug/L	10.0	ND	98.0	80-120	1.07	30	
1,1,1,2-Tetrachloroethane	9.07	0.20	ug/L	10.0	ND	90.7	80-120	1.04	30	
m,p-Xylene	20.7	0.40	ug/L	20.0	ND	104	80-121	0.51	30	
o-Xylene	10.6	0.20	ug/L	10.0	ND	106	80-121	0.78	30	
Xylenes, total	31.3	0.60	ug/L	30.0	ND	104	76-127	0.07	30	
Styrene	10.7	0.20	ug/L	10.0	ND	107	80-124	0.09	30	
Bromoform	9.24	0.20	ug/L	10.0	ND	92.4	51-134	0.91	30	
1,1,2,2-Tetrachloroethane	9.57	0.20	ug/L	10.0	ND	95.7	77-123	1.34	30	
1,2,3-Trichloropropane	10.3	0.25	ug/L	10.0	ND	103	76-125	0.60	30	
trans-1,4-Dichloro 2-Butene	9.66	1.00	ug/L	10.0	ND	96.6	55-129	12.10	30	
n-Propylbenzene	10.8	0.20	ug/L	10.0	ND	108	78-130	1.45	30	Q
Bromobenzene	9.84	0.20	ug/L	10.0	ND	98.4	80-120	0.49	30	
Isopropyl Benzene	16.0	0.20	ug/L	10.0	ND	160	80-128	2.26	30	*
2-Chlorotoluene	10.5	0.10	ug/L	10.0	ND	105	78-122	1.03	30	
4-Chlorotoluene	10.7	0.20	ug/L	10.0	ND	107	80-121	2.55	30	
t-Butylbenzene	11.3	0.20	ug/L	10.0	ND	113	78-125	1.49	30	Q
1,3,5-Trimethylbenzene	11.3	0.20	ug/L	10.0	ND	113	80-129	1.04	30	Q
1,2,4-Trimethylbenzene	10.9	0.20	ug/L	10.0	ND	109	80-127	1.57	30	Q
s-Butylbenzene	11.2	0.20	ug/L	10.0	ND	112	78-129	0.48	30	Q
4-Isopropyl Toluene	10.7	0.20	ug/L	10.0	ND	107	79-130	0.55	30	Q
1,3-Dichlorobenzene	9.98	0.20	ug/L	10.0	ND	99.8	80-120	1.57	30	
1,4-Dichlorobenzene	9.52	0.20	ug/L	10.0	ND	95.2	80-120	1.24	30	
n-Butylbenzene	10.4	0.20	ug/L	10.0	ND	104	74-129	1.19	30	Q
1,2-Dichlorobenzene	9.71	0.20	ug/L	10.0	ND	97.1	80-120	1.15	30	
1,2-Dibromo-3-chloropropane	9.45	0.50	ug/L	10.0	ND	94.5	62-123	2.30	30	
1,2,4-Trichlorobenzene	10.2	0.50	ug/L	10.0	ND	102	64-124	0.74	30	
Hexachloro-1,3-Butadiene	9.41	0.50	ug/L	10.0	ND	94.1	65-145	0.44	30	
Naphthalene	9.91	0.50	ug/L	10.0	ND	99.1	50-134	1.05	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0118 - EPA 8260D

Instrument: NT20 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BLJ0118-MSD1)	**Source: 23J0051-04**		Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 20:23							
1,2,3-Trichlorobenzene	10.5	0.50	ug/L	10.0	ND	105	49-133	1.17	30	
Dichlorodifluoromethane	7.90	0.20	ug/L	10.0	ND	79.0	48-147	1.67	30	
Surrogate: 1,2-Dichloroethane-d4	4.56		ug/L	*5.00*	*5.16*	*91.2*	*80-129*			
Surrogate: Toluene-d8	5.26		ug/L	*5.00*	*4.37*	*105*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.20		ug/L	*5.00*	*4.73*	*104*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.94		ug/L	*5.00*	*5.22*	*98.8*	*80-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0118 - EPA 8260D

Volatile Organic Compounds - Quality Control

Batch BLJ0126 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0126-BLK2)			Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 13:14							
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.10	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.10	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
2-Chloroethyl vinyl ether	ND	1.00	ug/L							U
4-Methyl-2-Pentanone	ND	2.50	ug/L							U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0126 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0126-BLK2)			Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 13:14							
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U
2-Hexanone	ND	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.10	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.10	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Xylenes, total	ND	0.60	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.25	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.10	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0126 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0126-BLK2)			Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 13:14							
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	0.50	ug/L							U
Naphthalene	ND	0.50	ug/L							U
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.98		ug/L	*5.00*		*99.6*	*80-129*			
Surrogate: Toluene-d8	4.83		ug/L	*5.00*		*96.6*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.93		ug/L	*5.00*		*98.6*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.86		ug/L	*5.00*		*97.3*	*80-120*			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0126 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLJ0126-BS2)				Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 11:45						
Chloromethane	9.46	0.50	ug/L	10.0		94.6	60-138			
Vinyl Chloride	9.87	0.10	ug/L	10.0		98.7	66-133			
Bromomethane	9.92	1.00	ug/L	10.0		99.2	72-131			
Chloroethane	9.50	0.20	ug/L	10.0		95.0	60-155			
Trichlorofluoromethane	10.4	0.20	ug/L	10.0		104	62-141			
Acrolein	47.7	5.00	ug/L	50.0		95.4	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.1	0.20	ug/L	10.0		101	76-129			
Acetone	47.0	5.00	ug/L	50.0		93.9	58-142			
1,1-Dichloroethene	9.71	0.20	ug/L	10.0		97.1	69-135			
Iodomethane	9.96	1.00	ug/L	10.0		99.6	56-147			
Methylene Chloride	9.20	1.00	ug/L	10.0		92.0	65-135			
Acrylonitrile	10.3	1.00	ug/L	10.0		103	64-134			
Carbon Disulfide	9.69	0.20	ug/L	10.0		96.9	78-125			
trans-1,2-Dichloroethene	9.37	0.20	ug/L	10.0		93.7	78-128			
Vinyl Acetate	9.98	0.20	ug/L	10.0		99.8	55-138			
1,1-Dichloroethane	9.88	0.20	ug/L	10.0		98.8	76-124			
2-Butanone	50.7	5.00	ug/L	50.0		101	61-140			
2,2-Dichloropropane	9.66	0.20	ug/L	10.0		96.6	66-147			
cis-1,2-Dichloroethene	9.86	0.20	ug/L	10.0		98.6	80-121			
Chloroform	9.82	0.20	ug/L	10.0		98.2	80-122			
Bromochloromethane	9.77	0.20	ug/L	10.0		97.7	80-121			
1,1,1-Trichloroethane	9.89	0.20	ug/L	10.0		98.9	79-123			
1,1-Dichloropropene	10.1	0.10	ug/L	10.0		101	80-127			
Carbon tetrachloride	9.74	0.20	ug/L	10.0		97.4	53-137			
1,2-Dichloroethane	9.66	0.20	ug/L	10.0		96.6	75-123			
Benzene	10.0	0.20	ug/L	10.0		100	80-120			
Trichloroethene	9.88	0.20	ug/L	10.0		98.8	80-120			
1,2-Dichloropropane	9.76	0.20	ug/L	10.0		97.6	80-120			
Bromodichloromethane	9.87	0.20	ug/L	10.0		98.7	80-121			
Dibromomethane	9.81	0.20	ug/L	10.0		98.1	80-120			
2-Chloroethyl vinyl ether	9.87	1.00	ug/L	10.0		98.7	64-120			
4-Methyl-2-Pentanone	49.8	2.50	ug/L	50.0		99.7	67-133			
cis-1,3-Dichloropropene	10.1	0.20	ug/L	10.0		101	80-124			
Toluene	9.95	0.20	ug/L	10.0		99.5	80-120			
trans-1,3-Dichloropropene	9.96	0.20	ug/L	10.0		99.6	71-127			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0126 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLJ0126-BS2)				Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 11:45						
2-Hexanone	49.3	5.00	ug/L	50.0		98.6	69-133			
1,1,2-Trichloroethane	9.76	0.20	ug/L	10.0		97.6	80-121			
1,3-Dichloropropane	10.1	0.10	ug/L	10.0		101	80-120			
Tetrachloroethene	10.3	0.20	ug/L	10.0		103	80-120			
Dibromochloromethane	10.1	0.20	ug/L	10.0		101	65-135			
1,2-Dibromoethane	9.93	0.10	ug/L	10.0		99.3	80-121			
Chlorobenzene	9.97	0.20	ug/L	10.0		99.7	80-120			
Ethylbenzene	10.2	0.20	ug/L	10.0		102	80-120			
1,1,1,2-Tetrachloroethane	9.91	0.20	ug/L	10.0		99.1	80-120			
m,p-Xylene	20.7	0.40	ug/L	20.0		104	80-121			
o-Xylene	10.2	0.20	ug/L	10.0		102	80-121			
Xylenes, total	30.9	0.60	ug/L	30.0		103	76-127			
Styrene	10.7	0.20	ug/L	10.0		107	80-124			
Bromoform	9.85	0.20	ug/L	10.0		98.5	51-134			
1,1,2,2-Tetrachloroethane	9.98	0.20	ug/L	10.0		99.8	77-123			
1,2,3-Trichloropropane	9.68	0.25	ug/L	10.0		96.8	76-125			
trans-1,4-Dichloro 2-Butene	10.1	1.00	ug/L	10.0		101	55-129			
n-Propylbenzene	10.7	0.20	ug/L	10.0		107	78-130			
Bromobenzene	10.3	0.20	ug/L	10.0		103	80-120			
Isopropyl Benzene	10.5	0.20	ug/L	10.0		105	80-128			
2-Chlorotoluene	10.1	0.10	ug/L	10.0		101	78-122			
4-Chlorotoluene	10.6	0.20	ug/L	10.0		106	80-121			
t-Butylbenzene	10.6	0.20	ug/L	10.0		106	78-125			
1,3,5-Trimethylbenzene	10.8	0.20	ug/L	10.0		108	80-129			
1,2,4-Trimethylbenzene	11.0	0.20	ug/L	10.0		110	80-127			
s-Butylbenzene	10.8	0.20	ug/L	10.0		108	78-129			
4-Isopropyl Toluene	11.0	0.20	ug/L	10.0		110	79-130			
1,3-Dichlorobenzene	10.6	0.20	ug/L	10.0		106	80-120			
1,4-Dichlorobenzene	10.5	0.20	ug/L	10.0		105	80-120			
n-Butylbenzene	11.4	0.20	ug/L	10.0		114	74-129			
1,2-Dichlorobenzene	10.4	0.20	ug/L	10.0		104	80-120			
1,2-Dibromo-3-chloropropane	9.96	0.50	ug/L	10.0		99.6	62-123			
1,2,4-Trichlorobenzene	11.2	0.50	ug/L	10.0		112	64-124			
Hexachloro-1,3-Butadiene	11.3	0.50	ug/L	10.0		113	65-145			
Naphthalene	11.3	0.50	ug/L	10.0		113	50-134			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0126 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLJ0126-BS2)				Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 11:45						
1,2,3-Trichlorobenzene	11.2	0.50	ug/L	10.0		112	49-133			
Dichlorodifluoromethane	10.5	0.20	ug/L	10.0		105	48-147			
Surrogate: 1,2-Dichloroethane-d4	5.06		ug/L	*5.00*		*101*	*80-129*			
Surrogate: Toluene-d8	4.90		ug/L	*5.00*		*98.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.90		ug/L	*5.00*		*98.0*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.94		ug/L	*5.00*		*98.7*	*80-120*			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0126 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLJ0126-BSD2)				Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 12:30						
Chloromethane	10.3	0.50	ug/L	10.0		103	60-138	8.10	30	
Vinyl Chloride	9.69	0.10	ug/L	10.0		96.9	66-133	1.79	30	
Bromomethane	10.4	1.00	ug/L	10.0		104	72-131	4.77	30	
Chloroethane	10.1	0.20	ug/L	10.0		101	60-155	5.80	30	
Trichlorofluoromethane	10.4	0.20	ug/L	10.0		104	62-141	0.04	30	
Acrolein	50.5	5.00	ug/L	50.0		101	52-190	5.64	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.0	0.20	ug/L	10.0		100	76-129	0.96	30	
Acetone	49.7	5.00	ug/L	50.0		99.3	58-142	5.60	30	
1,1-Dichloroethene	10.0	0.20	ug/L	10.0		100	69-135	3.29	30	
Iodomethane	10.3	1.00	ug/L	10.0		103	56-147	3.57	30	
Methylene Chloride	10.1	1.00	ug/L	10.0		101	65-135	9.09	30	
Acrylonitrile	10.4	1.00	ug/L	10.0		104	64-134	0.34	30	
Carbon Disulfide	9.72	0.20	ug/L	10.0		97.2	78-125	0.35	30	
trans-1,2-Dichloroethene	10.1	0.20	ug/L	10.0		101	78-128	7.33	30	
Vinyl Acetate	10.3	0.20	ug/L	10.0		103	55-138	3.16	30	
1,1-Dichloroethane	10.1	0.20	ug/L	10.0		101	76-124	2.14	30	
2-Butanone	52.3	5.00	ug/L	50.0		105	61-140	3.02	30	
2,2-Dichloropropane	9.77	0.20	ug/L	10.0		97.7	66-147	1.13	30	
cis-1,2-Dichloroethene	9.98	0.20	ug/L	10.0		99.8	80-121	1.22	30	
Chloroform	10.1	0.20	ug/L	10.0		101	80-122	2.49	30	
Bromochloromethane	10.3	0.20	ug/L	10.0		103	80-121	5.50	30	
1,1,1-Trichloroethane	10.1	0.20	ug/L	10.0		101	79-123	2.40	30	
1,1-Dichloropropene	10.0	0.10	ug/L	10.0		100	80-127	0.08	30	
Carbon tetrachloride	10.1	0.20	ug/L	10.0		101	53-137	3.69	30	
1,2-Dichloroethane	10.4	0.20	ug/L	10.0		104	75-123	6.92	30	
Benzene	10.3	0.20	ug/L	10.0		103	80-120	2.36	30	
Trichloroethene	10.0	0.20	ug/L	10.0		100	80-120	1.60	30	
1,2-Dichloropropane	10.3	0.20	ug/L	10.0		103	80-120	5.42	30	
Bromodichloromethane	10.3	0.20	ug/L	10.0		103	80-121	4.15	30	
Dibromomethane	10.1	0.20	ug/L	10.0		101	80-120	3.19	30	
2-Chloroethyl vinyl ether	10.0	1.00	ug/L	10.0		100	64-120	1.60	30	
4-Methyl-2-Pentanone	52.8	2.50	ug/L	50.0		106	67-133	5.89	30	
cis-1,3-Dichloropropene	10.4	0.20	ug/L	10.0		104	80-124	3.48	30	
Toluene	10.3	0.20	ug/L	10.0		103	80-120	3.42	30	
trans-1,3-Dichloropropene	10.5	0.20	ug/L	10.0		105	71-127	5.03	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0126 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLJ0126-BSD2)				Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 12:30						
2-Hexanone	52.8	5.00	ug/L	50.0		106	69-133	6.90	30	
1,1,2-Trichloroethane	10.3	0.20	ug/L	10.0		103	80-121	5.08	30	
1,3-Dichloropropane	10.5	0.10	ug/L	10.0		105	80-120	4.41	30	
Tetrachloroethene	10.3	0.20	ug/L	10.0		103	80-120	0.10	30	
Dibromochloromethane	10.6	0.20	ug/L	10.0		106	65-135	4.56	30	
1,2-Dibromoethane	10.2	0.10	ug/L	10.0		102	80-121	3.00	30	
Chlorobenzene	10.3	0.20	ug/L	10.0		103	80-120	3.66	30	
Ethylbenzene	10.6	0.20	ug/L	10.0		106	80-120	4.11	30	
1,1,1,2-Tetrachloroethane	10.7	0.20	ug/L	10.0		107	80-120	7.70	30	
m,p-Xylene	22.0	0.40	ug/L	20.0		110	80-121	6.07	30	
o-Xylene	10.8	0.20	ug/L	10.0		108	80-121	5.79	30	
Xylenes, total	32.8	0.60	ug/L	30.0		109	76-127	5.98	30	
Styrene	11.4	0.20	ug/L	10.0		114	80-124	6.50	30	
Bromoform	10.1	0.20	ug/L	10.0		101	51-134	2.77	30	
1,1,2,2-Tetrachloroethane	10.3	0.20	ug/L	10.0		103	77-123	3.53	30	
1,2,3-Trichloropropane	10.2	0.25	ug/L	10.0		102	76-125	4.89	30	
trans-1,4-Dichloro 2-Butene	9.90	1.00	ug/L	10.0		99.0	55-129	2.25	30	
n-Propylbenzene	10.7	0.20	ug/L	10.0		107	78-130	0.58	30	
Bromobenzene	10.5	0.20	ug/L	10.0		105	80-120	1.64	30	
Isopropyl Benzene	10.7	0.20	ug/L	10.0		107	80-128	2.16	30	
2-Chlorotoluene	10.1	0.10	ug/L	10.0		101	78-122	0.51	30	
4-Chlorotoluene	10.6	0.20	ug/L	10.0		106	80-121	0.17	30	
t-Butylbenzene	10.8	0.20	ug/L	10.0		108	78-125	2.34	30	
1,3,5-Trimethylbenzene	10.9	0.20	ug/L	10.0		109	80-129	1.24	30	
1,2,4-Trimethylbenzene	11.1	0.20	ug/L	10.0		111	80-127	0.93	30	
s-Butylbenzene	10.8	0.20	ug/L	10.0		108	78-129	0.48	30	
4-Isopropyl Toluene	11.1	0.20	ug/L	10.0		111	79-130	0.88	30	
1,3-Dichlorobenzene	10.6	0.20	ug/L	10.0		106	80-120	0.56	30	
1,4-Dichlorobenzene	10.7	0.20	ug/L	10.0		107	80-120	1.58	30	
n-Butylbenzene	11.4	0.20	ug/L	10.0		114	74-129	0.61	30	
1,2-Dichlorobenzene	10.6	0.20	ug/L	10.0		106	80-120	1.94	30	
1,2-Dibromo-3-chloropropane	10.7	0.50	ug/L	10.0		107	62-123	7.48	30	
1,2,4-Trichlorobenzene	11.6	0.50	ug/L	10.0		116	64-124	3.02	30	
Hexachloro-1,3-Butadiene	11.2	0.50	ug/L	10.0		112	65-145	0.44	30	
Naphthalene	12.0	0.50	ug/L	10.0		120	50-134	6.02	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0126 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLJ0126-BSD2)				Prepared: 04-Oct-2023 Analyzed: 04-Oct-2023 12:30						
1,2,3-Trichlorobenzene	11.9	0.50	ug/L	10.0		119	49-133	5.48	30	
Dichlorodifluoromethane	10.4	0.20	ug/L	10.0		104	48-147	0.95	30	
Surrogate: 1,2-Dichloroethane-d4	4.93		ug/L	*5.00*		*98.6*	*80-129*			
Surrogate: Toluene-d8	4.92		ug/L	*5.00*		*98.4*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.95		ug/L	*5.00*		*99.0*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.04		ug/L	*5.00*		*101*	*80-120*			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0126 - EPA 8260D

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BLJ0084 - EPA 8270E-SIM

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0084-BLK1)			Prepared: 03-Oct-2023 Analyzed: 09-Oct-2023 20:24							
1,4-Dioxane	ND	0.4	ug/L							U
Surrogate: 1,4-Dioxane-d8	7.50		ug/L	*10.0*		*75.0*	*33.6-120*			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BLJ0084 - EPA 8270E-SIM

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLJ0084-BS1)				Prepared: 03-Oct-2023 Analyzed: 09-Oct-2023 20:50						
1,4-Dioxane	6.4	0.4	ug/L	10.0		63.7	39.9-120			
Surrogate: 1,4-Dioxane-d8	7.79		ug/L	*10.0*		*77.9*	*33.6-120*			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BLJ0084 - EPA 8270E-SIM

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLJ0084-BSD1)				Prepared: 03-Oct-2023 Analyzed: 09-Oct-2023 21:15						
1,4-Dioxane	6.9	0.4	ug/L	10.0		69.3	39.9-120	8.36	30	
Surrogate: 1,4-Dioxane-d8	7.64		ug/L	*10.0*		*76.4*	*33.6-120*			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BLJ0084 - EPA 8270E-SIM

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BLJ0084-MS1)	**Source: 23J0051-04**		Prepared: 03-Oct-2023 Analyzed: 09-Oct-2023 22:06							
1,4-Dioxane	8.1	0.4	ug/L	10.0	1.9	62.7	35.1-120			
Surrogate: 1,4-Dioxane-d8	7.28		ug/L	*10.0*	*8.12*	*72.8*	*33.6-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BLJ0084 - EPA 8270E-SIM

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BLJ0084-MSD1)	**Source: 23J0051-04**		Prepared: 03-Oct-2023 Analyzed: 09-Oct-2023 22:32							
1,4-Dioxane	9.2	0.4	ug/L	10.0	1.9	73.2	35.1-120	12.10	30	
Surrogate: 1,4-Dioxane-d8	8.06		ug/L	*10.0*	*8.12*	*80.6*	*33.6-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BLJ0084 - EPA 8270E-SIM

Analysis by: Analytical Resources, LLC

Petroleum Hydrocarbons - Quality Control

Batch BLJ0085 - NWTPH-HCID

Instrument: FID4 Analyst: AA/NRB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0085-BLK1)			Prepared: 03-Oct-2023 Analyzed: 04-Oct-2023 14:55							
Gasoline Range Organics (Tol-C12)	ND	0.25	mg/L							U
Diesel Range Organics (C12-C24)	ND	0.50	mg/L							U
Motor Oil Range Organics (C24-C38)	ND	1.00	mg/L							U
Surrogate: o-Terphenyl	0.189		mg/L	*0.225*		*84.1*	*50-150*			
Surrogate: n-Triacontane	0.299		mg/L	*0.225*		*133*	*50-150*			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Petroleum Hydrocarbons - Quality Control

Batch BLJ0085 - NWTPH-HCID

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLJ0129 - EPA 7470A

Instrument: HYDRA Analyst: ML

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0129-BLK1)				Prepared: 04-Oct-2023 Analyzed: 06-Oct-2023 12:15						
Mercury	ND	0.00100	mg/L							U
LCS (BLJ0129-BS1)				Prepared: 04-Oct-2023 Analyzed: 06-Oct-2023 12:18						
Mercury	0.00202	0.00100	mg/L	0.00200		101	80-120			
Duplicate (BLJ0129-DUP2)	**Source: 23J0051-04**			Prepared: 04-Oct-2023 Analyzed: 06-Oct-2023 12:32						
Mercury	ND	0.00100	mg/L		ND					U
Matrix Spike (BLJ0129-MS2)	**Source: 23J0051-04**			Prepared: 04-Oct-2023 Analyzed: 06-Oct-2023 12:34						
Mercury	ND	0.00100	mg/L	0.00100	ND	96.2	75-125			U
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BLJ0129-MSD2)	**Source: 23J0051-04**			Prepared: 04-Oct-2023 Analyzed: 06-Oct-2023 12:36						
Mercury	0.00102	0.00100	mg/L	0.00100	ND	102	75-125	5.57	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLJ0443 - EPA 200.8

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0443-BLK1)				Prepared: 13-Oct-2023 Analyzed: 13-Oct-2023 15:23							
Lead	208	ND	0.0100	mg/L							U
Thallium	205	ND	0.00200	mg/L							U
Arsenic	75a	ND	0.00300	mg/L							U
Selenium	78	ND	0.0250	mg/L							U
Blank (BLJ0443-BLK2)				Prepared: 13-Oct-2023 Analyzed: 26-Oct-2023 21:41							
Antimony	121	ND	0.00300	mg/L							U
LCS (BLJ0443-BS1)				Prepared: 13-Oct-2023 Analyzed: 13-Oct-2023 15:28							
Lead	208	0.0260	0.0100	mg/L	0.0250		104	80-120			
Thallium	205	0.0255	0.00200	mg/L	0.0250		102	80-120			
Arsenic	75a	0.0240	0.00300	mg/L	0.0250		95.8	80-120			
Selenium	78	0.0749	0.0250	mg/L	0.0800		93.6	80-120			
LCS (BLJ0443-BS2)				Prepared: 13-Oct-2023 Analyzed: 26-Oct-2023 21:46							
Antimony	121	0.0237	0.00300	mg/L	0.0250		94.6	80-120			
Duplicate (BLJ0443-DUP1)			**Source: 23J0051-04**	Prepared: 13-Oct-2023 Analyzed: 13-Oct-2023 23:55							
Lead	208	ND	0.0100	mg/L		ND					U
Thallium	205	ND	0.00200	mg/L		ND					U
Arsenic	75a	ND	0.00300	mg/L		ND					U
Selenium	78	ND	0.0250	mg/L		ND					U
Duplicate (BLJ0443-DUP2)			**Source: 23J0051-04**	Prepared: 13-Oct-2023 Analyzed: 27-Oct-2023 02:35							
Antimony	121	ND	0.00300	mg/L		ND					U
Matrix Spike (BLJ0443-MS1)			**Source: 23J0051-04**	Prepared: 13-Oct-2023 Analyzed: 14-Oct-2023 00:00							
Lead	208	0.0223	0.0100	mg/L	0.0250	ND	89.4	75-125			
Thallium	205	0.0224	0.00200	mg/L	0.0250	ND	89.6	75-125			
Arsenic	75a	0.0244	0.00300	mg/L	0.0250	ND	97.4	75-125			
Selenium	78	0.0726	0.0250	mg/L	0.0800	ND	90.3	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike (BLJ0443-MS2)			**Source: 23J0051-04**	Prepared: 13-Oct-2023 Analyzed: 27-Oct-2023 02:39							
Antimony	121	0.0234	0.00300	mg/L	0.0250	ND	93.4	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BLJ0443-MSD1)			**Source: 23J0051-04**	Prepared: 13-Oct-2023 Analyzed: 14-Oct-2023 00:05							

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLJ0443 - EPA 200.8

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BLJ0443-MSD1)		**Source: 23J0051-04**			Prepared: 13-Oct-2023 Analyzed: 14-Oct-2023 00:05						
Lead	208	0.0224	0.0100	mg/L	0.0250	ND	89.7	75-125	0.37	20	
Thallium	205	0.0225	0.00200	mg/L	0.0250	ND	90.1	75-125	0.62	20	
Arsenic	75a	0.0246	0.00300	mg/L	0.0250	ND	98.5	75-125	1.12	20	
Selenium	78	0.0743	0.0250	mg/L	0.0800	ND	92.4	75-125	2.29	20	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BLJ0443-MSD2)		**Source: 23J0051-04**			Prepared: 13-Oct-2023 Analyzed: 27-Oct-2023 02:43						
Antimony	121	0.0230	0.00300	mg/L	0.0250	ND	92.0	75-125	1.54	20	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLJ0480 - EPA 6010D

Instrument: ICP3 Analyst: DOE

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0480-BLK1)				Prepared: 16-Oct-2023 Analyzed: 17-Oct-2023 09:25						
Aluminum	ND	1.00	mg/L							U
Barium	ND	0.500	mg/L							U
Beryllium	ND	0.0100	mg/L							U
Cadmium	ND	0.0020	mg/L							U
Calcium	ND	0.500	mg/L							U
Chromium	ND	0.0100	mg/L							U
Cobalt	ND	0.0100	mg/L							U
Copper	ND	0.0030	mg/L							U
Iron	ND	0.200	mg/L							U
Magnesium	ND	0.500	mg/L							U
Manganese	ND	0.0100	mg/L							U
Nickel	ND	0.0100	mg/L							U
Potassium	ND	0.500	mg/L							U
Silver	ND	0.0050	mg/L							U
Sodium	ND	0.500	mg/L							U
Vanadium	ND	0.0030	mg/L							U
Zinc	ND	0.0200	mg/L							U
LCS (BLJ0480-BS1)				Prepared: 16-Oct-2023 Analyzed: 17-Oct-2023 09:27						
Aluminum	2.03	1.00	mg/L	2.00		102	80-120			
Barium	2.02	0.500	mg/L	2.00		101	80-120			
Beryllium	0.518	0.0100	mg/L	0.500		104	80-120			
Cadmium	0.516	0.0020	mg/L	0.500		103	80-120			
Calcium	10.1	0.500	mg/L	10.0		101	80-120			
Chromium	0.514	0.0100	mg/L	0.500		103	80-120			
Cobalt	0.509	0.0100	mg/L	0.500		102	80-120			
Copper	0.514	0.0030	mg/L	0.500		103	80-120			
Iron	2.12	0.200	mg/L	2.00		106	80-120			
Magnesium	10.2	0.500	mg/L	10.0		102	80-120			
Manganese	0.501	0.0100	mg/L	0.500		100	80-120			
Nickel	0.513	0.0100	mg/L	0.500		103	80-120			
Potassium	10.0	0.500	mg/L	10.0		100	80-120			
Silver	0.518	0.0050	mg/L	0.500		104	80-120			
Sodium	10.2	0.500	mg/L	10.0		102	80-120			
Vanadium	0.525	0.0030	mg/L	0.500		105	80-120			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLJ0480 - EPA 6010D

Instrument: ICP3 Analyst: DOE

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLJ0480-BS1)				Prepared: 16-Oct-2023 Analyzed: 17-Oct-2023 09:27						
Zinc	0.500	0.0200	mg/L	0.500		100	80-120			
Duplicate (BLJ0480-DUP2)		**Source: 23J0051-04**		Prepared: 16-Oct-2023 Analyzed: 17-Oct-2023 09:45						
Aluminum	ND	1.00	mg/L		ND					U
Barium	ND	0.500	mg/L		ND					U
Beryllium	ND	0.0100	mg/L		ND					U
Cadmium	ND	0.0020	mg/L		ND					U
Calcium	110	0.500	mg/L		105			4.17	20	
Chromium	ND	0.0100	mg/L		ND					U
Cobalt	ND	0.0100	mg/L		ND					L, U
Copper	ND	0.0030	mg/L		ND					U
Iron	1.36	0.200	mg/L		1.30			4.89	20	
Magnesium	66.1	0.500	mg/L		63.1			4.76	20	
Manganese	0.132	0.0100	mg/L		0.125			5.61	20	
Nickel	ND	0.0100	mg/L		ND					U
Potassium	3.97	0.500	mg/L		3.75			5.53	20	
Silver	ND	0.0050	mg/L		ND					U
Sodium	44.0	0.500	mg/L		42.1			4.32	20	
Vanadium	ND	0.0030	mg/L		ND					U
Zinc	ND	0.0200	mg/L		ND					U
Matrix Spike (BLJ0480-MS2)		**Source: 23J0051-04**		Prepared: 16-Oct-2023 Analyzed: 17-Oct-2023 09:48						
Aluminum	2.04	1.00	mg/L	2.00	ND	102	75-125			
Barium	2.42	0.500	mg/L	2.00	ND	103	75-125			
Beryllium	0.532	0.0100	mg/L	0.500	ND	106	75-125			
Cadmium	0.518	0.0020	mg/L	0.500	ND	104	75-125			
Calcium	119	0.500	mg/L	10.0	105	139	75-125			HC
Chromium	0.519	0.0100	mg/L	0.500	ND	104	75-125			
Cobalt	0.500	0.0100	mg/L	0.500	ND	99.8	75-125			
Copper	0.531	0.0030	mg/L	0.500	ND	106	75-125			
Iron	3.51	0.200	mg/L	2.00	1.30	111	75-125			
Magnesium	76.7	0.500	mg/L	10.0	63.1	137	75-125			HC
Manganese	0.628	0.0100	mg/L	0.500	0.125	101	75-125			
Nickel	0.507	0.0100	mg/L	0.500	ND	101	75-125			
Potassium	14.3	0.500	mg/L	10.0	3.75	105	75-125			
Silver	0.531	0.0050	mg/L	0.500	ND	106	75-125			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLJ0480 - EPA 6010D

Instrument: ICP3 Analyst: DOE

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BLJ0480-MS2)	**Source: 23J0051-04**		Prepared: 16-Oct-2023 Analyzed: 17-Oct-2023 09:48							
Sodium	54.0	0.500	mg/L	10.0	42.1	119	75-125			E
Vanadium	0.540	0.0030	mg/L	0.500	ND	108	75-125			
Zinc	0.482	0.0200	mg/L	0.500	ND	96.3	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BLJ0480-MSD2)	**Source: 23J0051-04**		Prepared: 16-Oct-2023 Analyzed: 17-Oct-2023 09:52							
Aluminum	2.00	1.00	mg/L	2.00	ND	99.8	75-125	2.26	20	
Barium	2.37	0.500	mg/L	2.00	ND	101	75-125	2.41	20	
Beryllium	0.519	0.0100	mg/L	0.500	ND	104	75-125	2.46	20	
Cadmium	0.506	0.0020	mg/L	0.500	ND	101	75-125	2.27	20	
Calcium	118	0.500	mg/L	10.0	105	124	75-125	1.25	20	
Chromium	0.507	0.0100	mg/L	0.500	ND	101	75-125	2.48	20	
Cobalt	0.487	0.0100	mg/L	0.500	ND	97.2	75-125	2.62	20	
Copper	0.518	0.0030	mg/L	0.500	ND	104	75-125	2.42	20	
Iron	3.43	0.200	mg/L	2.00	1.30	107	75-125	2.26	20	
Magnesium	75.5	0.500	mg/L	10.0	63.1	124	75-125	1.65	20	
Manganese	0.612	0.0100	mg/L	0.500	0.125	97.4	75-125	2.68	20	
Nickel	0.495	0.0100	mg/L	0.500	ND	98.9	75-125	2.50	20	
Potassium	14.0	0.500	mg/L	10.0	3.75	102	75-125	2.25	20	
Silver	0.520	0.0050	mg/L	0.500	ND	104	75-125	2.02	20	
Sodium	53.3	0.500	mg/L	10.0	42.1	112	75-125	1.33	20	E
Vanadium	0.527	0.0030	mg/L	0.500	ND	105	75-125	2.49	20	
Zinc	0.457	0.0200	mg/L	0.500	ND	91.4	75-125	5.24	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 13:07

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 in Water	
Lead-208	NELAP,WADOE,WA-DW,DoD-ELAP
Antimony-121	NELAP,WADOE,WA-DW,DoD-ELAP
Thallium-205	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Selenium-78	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 6010D in Water	
Silver	WADOE,NELAP,DoD-ELAP
Aluminum	WADOE,NELAP,DoD-ELAP
Barium	WADOE,NELAP,DoD-ELAP,ADEC
Beryllium	WADOE,NELAP,DoD-ELAP
Calcium	WADOE,NELAP,DoD-ELAP
Cadmium	WADOE,NELAP,DoD-ELAP,ADEC
Cobalt	WADOE,NELAP,DoD-ELAP
Chromium	WADOE,NELAP,DoD-ELAP,ADEC
Copper	WADOE,NELAP,DoD-ELAP
Iron	WADOE,NELAP,DoD-ELAP
Potassium	WADOE,NELAP,DoD-ELAP
Magnesium	WADOE,NELAP,DoD-ELAP
Manganese	WADOE,NELAP,DoD-ELAP
Sodium	DoD-ELAP,WADOE,NELAP
Sodium-1	DoD-ELAP
Nickel	WADOE,NELAP,DoD-ELAP,ADEC
Vanadium	WADOE,NELAP,DoD-ELAP,ADEC
Zinc	WADOE,NELAP,DoD-ELAP
EPA 7470A in Water	
Mercury	WADOE,NELAP,DoD-ELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE

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Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroeth	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE

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trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE

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Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
EPA 8270E-SIM in Water	
1,4-Dioxane	WADOE,NELAP,DoD-ELAP
NWTPH-HCID in Water	
Gasoline Range Organics (Tol-C	NELAP,DoD-ELAP,WADOE
Diesel Range Organics (C12-C2	NELAP,DoD-ELAP,WADOE
Motor Oil Range Organics (C24-	NELAP,DoD-ELAP,WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2025
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	02/28/2025
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2024

Golder Associates	Project: Landsburg	
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Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
D	The reported value is from a dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
HC	The natural concentration of the spiked analyte is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
J	Estimated concentration value detected below the reporting limit.
L	Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, LLC
Analytical Chemists and Consultants
Tukwila, WA

02 November 2023

Gary Zimmerman
Golder Associates
18300 NE Union Hill Road Suite 200
Redmond, WA 98052-3333

RE: Landsburg (GL9231000007.2023)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
23J0141	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 2350141
Turn-around Requested: Standard
Date: 9/28/23
ARI Client Company: Golder (now WSP)
Phone: 425-883-0777
Page: 9/28/23 1 of 1
Client Contact: Gary Zimmerman/Autumn Pearson
No. of Coolers: 2
Cooler Temps: 5.9° 4.9° 0.8°
Client Project Name: Landsburg 2023-09 Sampling
Client Project #: GL9231000007.2023
Samplers: AP+SG

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	VOCs	1,4-Dioxane	Total Priority Metal	TPH-HCID (NWTPH)	TPH-Dx (HOLD)	TPH-Gx (HOLD)			Notes/Comments
	Analysis Requested												
LMW-6-0923	9/28/23	1015	W	8	X		X	X	X	X			Analyze in accordance with MSA between Golder and ARI Ecology EIM EDD (now WSP)
LMW-14-0923	"	1115	"	8	X		X	X	X	X			
LMW-15-0923	"	1215	"	8	X		X	X	X	X			
LMW-11-0923	"	1315	"	8	X		X	X	X	X			
LMW-7-0923	"	1500	"	8	X		X	X	X	X			
LMW-FB1-0923	↓	1430	↓	8	X		X	X	X	X			
Trip Blank	—	—	W	3	X								

Comments/Special Instructions
HOLD TPH FOLLOW-UPS. CLIENT SPECIFIC RLs/Analyte List
One 1 L amber used in place of two 500 mLs.

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)				
Printed Name:	Autumn Pearson	Rowan M.		
Company:	WSP	ARI		
Date & Time:	9/28/23 1650	9/28/23 1650		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: Unless specified by workorder or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LMW-6-0923	23J0141-01	Water	28-Sep-2023 10:15	28-Sep-2023 16:50
LMW-14-0923	23J0141-02	Water	28-Sep-2023 11:15	28-Sep-2023 16:50
LMW-15-0923	23J0141-03	Water	28-Sep-2023 12:15	28-Sep-2023 16:50
LMW-11-0923	23J0141-04	Water	28-Sep-2023 13:15	28-Sep-2023 16:50
LMW-7-0923	23J0141-05	Water	28-Sep-2023 15:00	28-Sep-2023 16:50
LMW-FB1-0923	23J0141-06	Water	28-Sep-2023 14:30	28-Sep-2023 16:50
Trip Blank	23J0141-07	Water	28-Sep-2023 10:15	28-Sep-2023 16:50

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
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Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within limits.

Total Metals - EPA Method 200.8, 6010D and 7470A

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits. The method blank(s) were clean at the reporting limits. The method blank contained copper below the RL and has been flagged with a * qualifer.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Hydrocarbon Identification (HCID) - WA-Ecology Method NW-HCID

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analytical Resources, LLC
Analytical Chemists and Consultants

Printed: 10/5/2023 9:13:35AM

WORK ORDER

23J0141

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: Golder Associates | **Project Manager:** Kelly Bottem

Project: Landsburg | **Project Number:** GL9231000007.2023

Preservation Confirmation

Container ID	Container Type	pH
23J0141-01 A	Glass NM, Amber, 1000 mL	
23J0141-01 B	Glass NM, Amber, 1000 mL	
23J0141-01 C	HDPE NM, 500 mL, 1:1 HNO3	<2 Pass
23J0141-01 D	VOA Vial, Clear, 40 mL, HCL	
23J0141-01 E	VOA Vial, Clear, 40 mL, HCL	
23J0141-01 F	VOA Vial, Clear, 40 mL, HCL	
23J0141-01 G	VOA Vial, Clear, 40 mL, HCL	
23J0141-01 H	VOA Vial, Clear, 40 mL, HCL	
23J0141-02 A	Glass NM, Amber, 1000 mL	
23J0141-02 B	Glass NM, Amber, 1000 mL	
23J0141-02 C	HDPE NM, 500 mL, 1:1 HNO3	<2 Pass
23J0141-02 D	VOA Vial, Clear, 40 mL, HCL	
23J0141-02 E	VOA Vial, Clear, 40 mL, HCL	
23J0141-02 F	VOA Vial, Clear, 40 mL, HCL	
23J0141-02 G	VOA Vial, Clear, 40 mL, HCL	
23J0141-02 H	VOA Vial, Clear, 40 mL, HCL	
23J0141-03 A	Glass NM, Amber, 1000 mL	
23J0141-03 B	Glass NM, Amber, 1000 mL	
23J0141-03 C	HDPE NM, 500 mL, 1:1 HNO3	<2 Pass
23J0141-03 D	VOA Vial, Clear, 40 mL, HCL	
23J0141-03 E	VOA Vial, Clear, 40 mL, HCL	
23J0141-03 F	VOA Vial, Clear, 40 mL, HCL	
23J0141-03 G	VOA Vial, Clear, 40 mL, HCL	
23J0141-03 H	VOA Vial, Clear, 40 mL, HCL	
23J0141-04 A	Glass NM, Amber, 1000 mL	
23J0141-04 B	Glass NM, Amber, 1000 mL	
23J0141-04 C	HDPE NM, 500 mL, 1:1 HNO3	<2 Pass
23J0141-04 D	VOA Vial, Clear, 40 mL, HCL	
23J0141-04 E	VOA Vial, Clear, 40 mL, HCL	
23J0141-04 F	VOA Vial, Clear, 40 mL, HCL	
23J0141-04 G	VOA Vial, Clear, 40 mL, HCL	
23J0141-04 H	VOA Vial, Clear, 40 mL, HCL	
23J0141-05 A	Glass NM, Amber, 1000 mL	
23J0141-05 B	Glass NM, Amber, 1000 mL	

Reviewed By _____ Date _____

WORK ORDER

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23J0141-05 C	HDPE NM, 500 mL, 1:1 HNO3	<2 pass
23J0141-05 D	VOA Vial, Clear, 40 mL, HCL	
23J0141-05 E	VOA Vial, Clear, 40 mL, HCL	
23J0141-05 F	VOA Vial, Clear, 40 mL, HCL	
23J0141-05 G	VOA Vial, Clear, 40 mL, HCL	
23J0141-05 H	VOA Vial, Clear, 40 mL, HCL	
23J0141-06 A	Glass NM, Amber, 1000 mL	
23J0141-06 B	Glass NM, Amber, 1000 mL	
23J0141-06 C	HDPE NM, 500 mL, 1:1 HNO3	<2 pass
23J0141-06 D	VOA Vial, Clear, 40 mL, HCL	
23J0141-06 E	VOA Vial, Clear, 40 mL, HCL	
23J0141-06 F	VOA Vial, Clear, 40 mL, HCL	
23J0141-06 G	VOA Vial, Clear, 40 mL, HCL	
23J0141-06 H	VOA Vial, Clear, 40 mL, HCL	
23J0141-07 A	VOA Vial, Clear, 40 mL, HCL	
23J0141-07 B	VOA Vial, Clear, 40 mL, HCL	
23J0141-07 C	VOA Vial, Clear, 40 mL, HCL	

KFC
Preservation Confirmed By

10-05-23
Date

Reviewed By

Date

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: WSP

COC No(s): _____ NA

Assigned ARI Job No: 23J0141

Project Name: Landsburg 2023-09 Sampling

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1650 — 5.9 4.9 0.8 ____ ____ ____

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 9708

Cooler Accepted by: _____ Date: 9/28/23 Time: 1650

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA	_____	

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: KFC Date: 10/5/23 Time: 0844 Labels checked by: KFC

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____

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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-6-0923

23J0141-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 10:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 14:25

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0141-01 D

Preparation Batch: BLJ0186 — Sample Size: 10 mL

Prepared: 10/05/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U

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23J0141-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 10:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 14:25

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U

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LMW-6-0923

23J0141-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 10:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 14:25

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*104*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*100*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*104*	*%*	

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LMW-6-0923

23J0141-01 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/28/2023 10:15
Instrument: FID4 Analyst: NRB — Analyzed: 10/09/2023 13:33

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0141-01 A 01
Preparation Batch: BLJ0174 — Sample Size: 500 mL
Prepared: 10/05/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*87.8*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*136*	*%*	

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LMW-6-0923

23J0141-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/28/2023 10:15

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/18/2023 00:42

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0141-01 C 01

Preparation Batch: BLJ0525 — Sample Size: 25 mL

Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

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LMW-6-0923

23J0141-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/28/2023 10:15

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 03:16

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0141-01 C

Preparation Batch: BLJ0525 — Sample Size: 25 mL

Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

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LMW-6-0923

23J0141-01 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2023 10:15

Instrument: ICP3 Analyst: DOE — Analyzed: 10/19/2023 11:17

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0141-01 C 02

Preparation Batch: BLJ0519 — Sample Size: 25 mL

Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	27.6	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	2.24	mg/L	
Magnesium	7439-95-4	1	0.500	14.3	mg/L	
Manganese	7439-96-5	1	0.0100	0.0277	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	0.674	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	7.34	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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LMW-6-0923

23J0141-01 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/28/2023 10:15

Instrument: HYDRA Analyst: ML — Analyzed: 10/19/2023 11:33

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0141-01 C

Preparation Batch: BLJ0290 — Sample Size: 20 mL

Prepared: 10/09/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

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LMW-14-0923

23J0141-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 11:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 14:47

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0141-02 D

Preparation Batch: BLJ0186 — Sample Size: 10 mL

Prepared: 10/05/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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LMW-14-0923

23J0141-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 11:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 14:47

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*112*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-14-0923

23J0141-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 11:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 14:47

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*99.0*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*97.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*103*	*%*	

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-14-0923

23J0141-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/28/2023 11:15

Instrument: FID4 Analyst: NRB — Analyzed: 10/09/2023 13:54

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0141-02 A 01

Preparation Batch: BLJ0174 — Sample Size: 500 mL

Prepared: 10/05/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*85.8*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*132*	*%*	

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-14-0923

23J0141-02 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/28/2023 11:15

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/30/2023 20:18

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0141-02 C 01

Preparation Batch: BLJ0525 — Sample Size: 25 mL

Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-14-0923

23J0141-02 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/28/2023 11:15

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 04:10

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0141-02 C 01

Preparation Batch: BLJ0525 — Sample Size: 25 mL

Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-14-0923

23J0141-02 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2023 11:15

Instrument: ICP3 Analyst: DOE — Analyzed: 10/19/2023 11:20

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0141-02 C 02

Preparation Batch: BLJ0519 — Sample Size: 25 mL

Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	130	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	9.69	mg/L	
Magnesium	7439-95-4	1	0.500	60.0	mg/L	
Manganese	7439-96-5	1	0.0100	0.594	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	3.48	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	10.5	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-14-0923

23J0141-02 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/28/2023 11:15

Instrument: HYDRA Analyst: ML — Analyzed: 10/19/2023 12:13

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0141-02 C

Preparation Batch: BLJ0290 — Sample Size: 20 mL

Prepared: 10/09/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-15-0923

23J0141-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 12:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 15:09

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0141-03 D

Preparation Batch: BLJ0186 — Sample Size: 10 mL

Prepared: 10/05/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
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23J0141-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 12:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 15:09

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*110*	*%*	

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

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23J0141-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 12:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 15:09

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*104*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*96.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*105*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-15-0923

23J0141-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/28/2023 12:15
Instrument: FID4 Analyst: NRB — Analyzed: 10/09/2023 14:14

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0141-03 A 01
Preparation Batch: BLJ0174 — Sample Size: 500 mL
Prepared: 10/05/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*84.4*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*130*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

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23J0141-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/28/2023 12:15

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/31/2023 00:01

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0141-03 C 01

Preparation Batch: BLJ0525 — Sample Size: 25 mL

Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	0.00307	mg/L	
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-15-0923

23J0141-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/28/2023 12:15

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 04:13

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0141-03 C 01

Preparation Batch: BLJ0525 — Sample Size: 25 mL

Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-15-0923

23J0141-03 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2023 12:15

Instrument: ICP3 Analyst: DOE — Analyzed: 10/19/2023 11:23

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0141-03 C 02

Preparation Batch: BLJ0519 — Sample Size: 25 mL

Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	57.6	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	3.90	mg/L	
Magnesium	7439-95-4	1	0.500	24.6	mg/L	
Manganese	7439-96-5	1	0.0100	0.368	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	1.83	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	12.8	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-15-0923

23J0141-03 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/28/2023 12:15

Instrument: HYDRA Analyst: ML — Analyzed: 10/19/2023 12:15

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0141-03 C

Preparation Batch: BLJ0290 — Sample Size: 20 mL

Prepared: 10/09/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-11-0923

23J0141-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 13:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 15:31

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0141-04 D

Preparation Batch: BLJ0186 — Sample Size: 10 mL

Prepared: 10/05/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
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LMW-11-0923

23J0141-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 13:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 15:31

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-11-0923

23J0141-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 13:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 15:31

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*99.0*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*103*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*102*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-11-0923

23J0141-04 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/28/2023 13:15

Instrument: FID4 Analyst: NRB — Analyzed: 10/09/2023 14:35

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0141-04 A 01

Preparation Batch: BLJ0174 — Sample Size: 500 mL

Prepared: 10/05/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*85.1*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*131*	*%*	

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
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LMW-11-0923

23J0141-04 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/28/2023 13:15

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/31/2023 00:05

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0141-04 C 01

Preparation Batch: BLJ0525 — Sample Size: 25 mL

Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	0.00777	mg/L	
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-11-0923

23J0141-04 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/28/2023 13:15

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 04:17

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0141-04 C 01

Preparation Batch: BLJ0525 — Sample Size: 25 mL

Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
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LMW-11-0923

23J0141-04 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2023 13:15

Instrument: ICP3 Analyst: DOE — Analyzed: 10/19/2023 11:26

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0141-04 C 02

Preparation Batch: BLJ0519 — Sample Size: 25 mL

Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	58.8	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	0.499	mg/L	
Magnesium	7439-95-4	1	0.500	26.4	mg/L	
Manganese	7439-96-5	1	0.0100	0.174	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	2.03	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	23.1	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-11-0923

23J0141-04 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/28/2023 13:15

Instrument: HYDRA Analyst: ML — Analyzed: 10/19/2023 12:18

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0141-04 C

Preparation Batch: BLJ0290 — Sample Size: 20 mL

Prepared: 10/09/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-7-0923

23J0141-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 15:00

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 15:53

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0141-05 D

Preparation Batch: BLJ0186 — Sample Size: 10 mL

Prepared: 10/05/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

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23J0141-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 15:00

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 15:53

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*112*	*%*	

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

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23J0141-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 15:00

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 15:53

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*95.4*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*98.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*103*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-7-0923

23J0141-05 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/28/2023 15:00
Instrument: FID4 Analyst: NRB — Analyzed: 10/09/2023 14:55

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0141-05 A 01
Preparation Batch: BLJ0174 — Sample Size: 500 mL
Prepared: 10/05/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*82.7*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*127*	*%*	

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-7-0923

23J0141-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/28/2023 15:00

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/31/2023 00:09

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0141-05 C 01

Preparation Batch: BLJ0525 — Sample Size: 25 mL

Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

Analytical Resources, LLC
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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-7-0923

23J0141-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/28/2023 15:00

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 04:21

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0141-05 C 01

Preparation Batch: BLJ0525 — Sample Size: 25 mL

Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-7-0923

23J0141-05 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2023 15:00
Instrument: ICP3 Analyst: DOE — Analyzed: 10/19/2023 11:29

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0141-05 C 02
Preparation Batch: BLJ0519 — Sample Size: 25 mL
Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	43.0	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	0.702	mg/L	
Magnesium	7439-95-4	1	0.500	19.8	mg/L	
Manganese	7439-96-5	1	0.0100	0.0869	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	2.64	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	46.6	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-7-0923

23J0141-05 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/28/2023 15:00

Instrument: HYDRA Analyst: ML — Analyzed: 10/19/2023 12:25

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0141-05 C

Preparation Batch: BLJ0290 — Sample Size: 20 mL

Prepared: 10/09/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-FB1-0923

23J0141-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 14:30

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 16:15

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0141-06 D

Preparation Batch: BLJ0186 — Sample Size: 10 mL

Prepared: 10/05/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
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LMW-FB1-0923

23J0141-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 14:30

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 16:15

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*102*	*%*	

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LMW-FB1-0923

23J0141-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 14:30

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 16:15

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*97.5*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*103*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*105*	*%*	

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LMW-FB1-0923

23J0141-06 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/28/2023 14:30
Instrument: FID4 Analyst: NRB — Analyzed: 10/09/2023 15:16

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 23J0141-06 A 01
Preparation Batch: BLJ0174 — Sample Size: 500 mL
Prepared: 10/05/2023 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*86.8*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*134*	*%*	

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Analytical Report

Golder Associates	Project: Landsburg	
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LMW-FB1-0923

23J0141-06 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/28/2023 14:30

Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/31/2023 00:14

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0141-06 C 01

Preparation Batch: BLJ0525 — Sample Size: 25 mL

Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-FB1-0923

23J0141-06 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/28/2023 14:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 10/27/2023 04:25

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 23J0141-06 C 01
Preparation Batch: BLJ0525 — Sample Size: 25 mL
Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
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LMW-FB1-0923

23J0141-06 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2023 14:30

Instrument: ICP3 Analyst: DOE — Analyzed: 10/19/2023 10:05

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 23J0141-06 C 02

Preparation Batch: BLJ0519 — Sample Size: 25 mL

Prepared: 10/17/2023 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	ND	mg/L	U
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	ND	mg/L	U
Magnesium	7439-95-4	1	0.500	ND	mg/L	U
Manganese	7439-96-5	1	0.0100	ND	mg/L	U
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	ND	mg/L	U
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	ND	mg/L	U
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

LMW-FB1-0923

23J0141-06 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/28/2023 14:30
Instrument: HYDRA Analyst: ML — Analyzed: 10/19/2023 12:27

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 23J0141-06 C
Preparation Batch: BLJ0290 — Sample Size: 20 mL
Prepared: 10/09/2023 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Trip Blank

23J0141-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 10:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 12:56

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 23J0141-07 A

Preparation Batch: BLJ0186 — Sample Size: 10 mL

Prepared: 10/05/2023 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Trip Blank

23J0141-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 10:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 12:56

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Trip Blank

23J0141-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2023 10:15

Instrument: NT3 Analyst: TWC — Analyzed: 10/05/2023 12:56

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*97.4*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*103*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*102*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0186 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0186-BLK2)			Prepared: 05-Oct-2023 Analyzed: 05-Oct-2023 12:12							
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.10	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.10	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
2-Chloroethyl vinyl ether	ND	1.00	ug/L							U
4-Methyl-2-Pentanone	ND	2.50	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0186 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0186-BLK2)			Prepared: 05-Oct-2023 Analyzed: 05-Oct-2023 12:12							
2-Hexanone	ND	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.10	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.10	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Xylenes, total	ND	0.60	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.25	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.10	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	0.50	ug/L							U
Naphthalene	ND	0.50	ug/L							U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0186 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0186-BLK2)			Prepared: 05-Oct-2023 Analyzed: 05-Oct-2023 12:12							
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.11		ug/L	*5.00*		*102*	*80-129*			
Surrogate: Toluene-d8	4.84		ug/L	*5.00*		*96.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.27		ug/L	*5.00*		*105*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.09		ug/L	*5.00*		*102*	*80-120*			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0186 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLJ0186-BS2)				Prepared: 05-Oct-2023 Analyzed: 05-Oct-2023 10:41						
Chloromethane	8.91	0.50	ug/L	10.0		89.1	60-138			
Vinyl Chloride	8.69	0.10	ug/L	10.0		86.9	66-133			
Bromomethane	9.49	1.00	ug/L	10.0		94.9	72-131			
Chloroethane	9.33	0.20	ug/L	10.0		93.3	60-155			
Trichlorofluoromethane	9.17	0.20	ug/L	10.0		91.7	62-141			
Acrolein	46.5	5.00	ug/L	50.0		93.1	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.06	0.20	ug/L	10.0		90.6	76-129			
Acetone	44.5	5.00	ug/L	50.0		88.9	58-142			
1,1-Dichloroethene	9.31	0.20	ug/L	10.0		93.1	69-135			
Iodomethane	9.48	1.00	ug/L	10.0		94.8	56-147			
Methylene Chloride	9.07	1.00	ug/L	10.0		90.7	65-135			
Acrylonitrile	9.04	1.00	ug/L	10.0		90.4	64-134			
Carbon Disulfide	8.89	0.20	ug/L	10.0		88.9	78-125			
trans-1,2-Dichloroethene	9.05	0.20	ug/L	10.0		90.5	78-128			
Vinyl Acetate	9.39	0.20	ug/L	10.0		93.9	55-138			
1,1-Dichloroethane	9.10	0.20	ug/L	10.0		91.0	76-124			
2-Butanone	47.3	5.00	ug/L	50.0		94.6	61-140			
2,2-Dichloropropane	8.82	0.20	ug/L	10.0		88.2	66-147			
cis-1,2-Dichloroethene	9.16	0.20	ug/L	10.0		91.6	80-121			
Chloroform	9.41	0.20	ug/L	10.0		94.1	80-122			
Bromochloromethane	9.53	0.20	ug/L	10.0		95.3	80-121			
1,1,1-Trichloroethane	9.08	0.20	ug/L	10.0		90.8	79-123			
1,1-Dichloropropene	9.07	0.10	ug/L	10.0		90.7	80-127			
Carbon tetrachloride	9.08	0.20	ug/L	10.0		90.8	53-137			
1,2-Dichloroethane	9.15	0.20	ug/L	10.0		91.5	75-123			
Benzene	9.08	0.20	ug/L	10.0		90.8	80-120			
Trichloroethene	9.15	0.20	ug/L	10.0		91.5	80-120			
1,2-Dichloropropane	9.34	0.20	ug/L	10.0		93.4	80-120			
Bromodichloromethane	9.44	0.20	ug/L	10.0		94.4	80-121			
Dibromomethane	9.44	0.20	ug/L	10.0		94.4	80-120			
2-Chloroethyl vinyl ether	9.32	1.00	ug/L	10.0		93.2	64-120			
4-Methyl-2-Pentanone	49.6	2.50	ug/L	50.0		99.2	67-133			
cis-1,3-Dichloropropene	9.34	0.20	ug/L	10.0		93.4	80-124			
Toluene	9.35	0.20	ug/L	10.0		93.5	80-120			
trans-1,3-Dichloropropene	9.61	0.20	ug/L	10.0		96.1	71-127			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0186 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLJ0186-BS2)				Prepared: 05-Oct-2023 Analyzed: 05-Oct-2023 10:41						
2-Hexanone	47.0	5.00	ug/L	50.0		94.1	69-133			
1,1,2-Trichloroethane	9.18	0.20	ug/L	10.0		91.8	80-121			
1,3-Dichloropropane	9.44	0.10	ug/L	10.0		94.4	80-120			
Tetrachloroethene	9.44	0.20	ug/L	10.0		94.4	80-120			
Dibromochloromethane	9.62	0.20	ug/L	10.0		96.2	65-135			
1,2-Dibromoethane	9.76	0.10	ug/L	10.0		97.6	80-121			
Chlorobenzene	9.47	0.20	ug/L	10.0		94.7	80-120			
Ethylbenzene	9.66	0.20	ug/L	10.0		96.6	80-120			
1,1,1,2-Tetrachloroethane	9.28	0.20	ug/L	10.0		92.8	80-120			
m,p-Xylene	19.6	0.40	ug/L	20.0		97.9	80-121			
o-Xylene	9.42	0.20	ug/L	10.0		94.2	80-121			
Xylenes, total	29.0	0.60	ug/L	30.0		96.7	76-127			
Styrene	10.1	0.20	ug/L	10.0		101	80-124			
Bromoform	9.64	0.20	ug/L	10.0		96.4	51-134			
1,1,2,2-Tetrachloroethane	9.86	0.20	ug/L	10.0		98.6	77-123			
1,2,3-Trichloropropane	9.30	0.25	ug/L	10.0		93.0	76-125			
trans-1,4-Dichloro 2-Butene	9.43	1.00	ug/L	10.0		94.3	55-129			
n-Propylbenzene	9.98	0.20	ug/L	10.0		99.8	78-130			
Bromobenzene	9.74	0.20	ug/L	10.0		97.4	80-120			
Isopropyl Benzene	10.0	0.20	ug/L	10.0		100	80-128			
2-Chlorotoluene	9.57	0.10	ug/L	10.0		95.7	78-122			
4-Chlorotoluene	9.84	0.20	ug/L	10.0		98.4	80-121			
t-Butylbenzene	10.1	0.20	ug/L	10.0		101	78-125			
1,3,5-Trimethylbenzene	10.2	0.20	ug/L	10.0		102	80-129			
1,2,4-Trimethylbenzene	10.4	0.20	ug/L	10.0		104	80-127			
s-Butylbenzene	10.2	0.20	ug/L	10.0		102	78-129			
4-Isopropyl Toluene	10.4	0.20	ug/L	10.0		104	79-130			
1,3-Dichlorobenzene	9.85	0.20	ug/L	10.0		98.5	80-120			
1,4-Dichlorobenzene	10.0	0.20	ug/L	10.0		100	80-120			
n-Butylbenzene	10.7	0.20	ug/L	10.0		107	74-129			
1,2-Dichlorobenzene	9.95	0.20	ug/L	10.0		99.5	80-120			
1,2-Dibromo-3-chloropropane	9.85	0.50	ug/L	10.0		98.5	62-123			
1,2,4-Trichlorobenzene	11.2	0.50	ug/L	10.0		112	64-124			
Hexachloro-1,3-Butadiene	11.1	0.50	ug/L	10.0		111	65-145			
Naphthalene	11.5	0.50	ug/L	10.0		115	50-134			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0186 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLJ0186-BS2)				Prepared: 05-Oct-2023 Analyzed: 05-Oct-2023 10:41						
1,2,3-Trichlorobenzene	11.8	0.50	ug/L	10.0		118	49-133			
Dichlorodifluoromethane	9.66	0.20	ug/L	10.0		96.6	48-147			
Surrogate: 1,2-Dichloroethane-d4	4.96		ug/L	*5.00*		*99.2*	*80-129*			
Surrogate: Toluene-d8	4.92		ug/L	*5.00*		*98.4*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.79		ug/L	*5.00*		*95.8*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.08		ug/L	*5.00*		*102*	*80-120*			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0186 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLJ0186-BSD2)				Prepared: 05-Oct-2023 Analyzed: 05-Oct-2023 11:25						
Chloromethane	8.31	0.50	ug/L	10.0		83.1	60-138	6.98	30	
Vinyl Chloride	8.30	0.10	ug/L	10.0		83.0	66-133	4.64	30	
Bromomethane	8.65	1.00	ug/L	10.0		86.5	72-131	9.32	30	
Chloroethane	8.33	0.20	ug/L	10.0		83.3	60-155	11.40	30	
Trichlorofluoromethane	8.06	0.20	ug/L	10.0		80.6	62-141	12.90	30	
Acrolein	42.5	5.00	ug/L	50.0		85.0	52-190	9.07	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	8.39	0.20	ug/L	10.0		83.9	76-129	7.75	30	
Acetone	40.9	5.00	ug/L	50.0		81.8	58-142	8.27	30	
1,1-Dichloroethene	8.48	0.20	ug/L	10.0		84.8	69-135	9.26	30	
Iodomethane	8.81	1.00	ug/L	10.0		88.1	56-147	7.35	30	
Methylene Chloride	8.63	1.00	ug/L	10.0		86.3	65-135	4.98	30	
Acrylonitrile	8.33	1.00	ug/L	10.0		83.3	64-134	8.17	30	
Carbon Disulfide	8.03	0.20	ug/L	10.0		80.3	78-125	10.20	30	
trans-1,2-Dichloroethene	8.04	0.20	ug/L	10.0		80.4	78-128	11.90	30	
Vinyl Acetate	8.55	0.20	ug/L	10.0		85.5	55-138	9.38	30	
1,1-Dichloroethane	8.25	0.20	ug/L	10.0		82.5	76-124	9.85	30	
2-Butanone	43.1	5.00	ug/L	50.0		86.3	61-140	9.26	30	
2,2-Dichloropropane	7.93	0.20	ug/L	10.0		79.3	66-147	10.70	30	
cis-1,2-Dichloroethene	8.17	0.20	ug/L	10.0		81.7	80-121	11.30	30	
Chloroform	8.28	0.20	ug/L	10.0		82.8	80-122	12.70	30	
Bromochloromethane	8.38	0.20	ug/L	10.0		83.8	80-121	12.80	30	
1,1,1-Trichloroethane	8.30	0.20	ug/L	10.0		83.0	79-123	9.00	30	
1,1-Dichloropropene	8.31	0.10	ug/L	10.0		83.1	80-127	8.78	30	
Carbon tetrachloride	8.24	0.20	ug/L	10.0		82.4	53-137	9.76	30	
1,2-Dichloroethane	8.49	0.20	ug/L	10.0		84.9	75-123	7.52	30	
Benzene	8.22	0.20	ug/L	10.0		82.2	80-120	9.93	30	
Trichloroethene	8.21	0.20	ug/L	10.0		82.1	80-120	10.80	30	
1,2-Dichloropropane	8.21	0.20	ug/L	10.0		82.1	80-120	12.90	30	
Bromodichloromethane	8.48	0.20	ug/L	10.0		84.8	80-121	10.70	30	
Dibromomethane	8.40	0.20	ug/L	10.0		84.0	80-120	11.60	30	
2-Chloroethyl vinyl ether	8.45	1.00	ug/L	10.0		84.5	64-120	9.85	30	
4-Methyl-2-Pentanone	45.0	2.50	ug/L	50.0		89.9	67-133	9.75	30	
cis-1,3-Dichloropropene	8.42	0.20	ug/L	10.0		84.2	80-124	10.40	30	
Toluene	8.34	0.20	ug/L	10.0		83.4	80-120	11.40	30	
trans-1,3-Dichloropropene	8.82	0.20	ug/L	10.0		88.2	71-127	8.57	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0186 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLJ0186-BSD2)				Prepared: 05-Oct-2023 Analyzed: 05-Oct-2023 11:25						
2-Hexanone	43.9	5.00	ug/L	50.0		87.8	69-133	6.92	30	
1,1,2-Trichloroethane	8.95	0.20	ug/L	10.0		89.5	80-121	2.55	30	
1,3-Dichloropropane	8.85	0.10	ug/L	10.0		88.5	80-120	6.36	30	
Tetrachloroethene	8.74	0.20	ug/L	10.0		87.4	80-120	7.71	30	
Dibromochloromethane	9.07	0.20	ug/L	10.0		90.7	65-135	5.95	30	
1,2-Dibromoethane	8.85	0.10	ug/L	10.0		88.5	80-121	9.78	30	
Chlorobenzene	8.52	0.20	ug/L	10.0		85.2	80-120	10.50	30	
Ethylbenzene	8.59	0.20	ug/L	10.0		85.9	80-120	11.70	30	
1,1,1,2-Tetrachloroethane	8.61	0.20	ug/L	10.0		86.1	80-120	7.46	30	
m,p-Xylene	18.0	0.40	ug/L	20.0		90.2	80-121	8.23	30	
o-Xylene	8.92	0.20	ug/L	10.0		89.2	80-121	5.48	30	
Xylenes, total	27.0	0.60	ug/L	30.0		89.8	76-127	7.33	30	
Styrene	9.41	0.20	ug/L	10.0		94.1	80-124	7.46	30	
Bromoform	8.44	0.20	ug/L	10.0		84.4	51-134	13.30	30	
1,1,2,2-Tetrachloroethane	8.65	0.20	ug/L	10.0		86.5	77-123	13.10	30	
1,2,3-Trichloropropane	8.18	0.25	ug/L	10.0		81.8	76-125	12.90	30	
trans-1,4-Dichloro 2-Butene	7.97	1.00	ug/L	10.0		79.7	55-129	16.70	30	
n-Propylbenzene	8.50	0.20	ug/L	10.0		85.0	78-130	15.90	30	
Bromobenzene	8.48	0.20	ug/L	10.0		84.8	80-120	13.90	30	
Isopropyl Benzene	8.62	0.20	ug/L	10.0		86.2	80-128	15.20	30	
2-Chlorotoluene	8.20	0.10	ug/L	10.0		82.0	78-122	15.40	30	
4-Chlorotoluene	8.39	0.20	ug/L	10.0		83.9	80-121	15.90	30	
t-Butylbenzene	8.52	0.20	ug/L	10.0		85.2	78-125	16.80	30	
1,3,5-Trimethylbenzene	8.76	0.20	ug/L	10.0		87.6	80-129	15.50	30	
1,2,4-Trimethylbenzene	8.85	0.20	ug/L	10.0		88.5	80-127	15.80	30	
s-Butylbenzene	8.52	0.20	ug/L	10.0		85.2	78-129	17.80	30	
4-Isopropyl Toluene	8.91	0.20	ug/L	10.0		89.1	79-130	15.70	30	
1,3-Dichlorobenzene	8.33	0.20	ug/L	10.0		83.3	80-120	16.70	30	
1,4-Dichlorobenzene	8.56	0.20	ug/L	10.0		85.6	80-120	15.60	30	
n-Butylbenzene	9.18	0.20	ug/L	10.0		91.8	74-129	15.10	30	
1,2-Dichlorobenzene	8.72	0.20	ug/L	10.0		87.2	80-120	13.20	30	
1,2-Dibromo-3-chloropropane	8.48	0.50	ug/L	10.0		84.8	62-123	14.90	30	
1,2,4-Trichlorobenzene	9.67	0.50	ug/L	10.0		96.7	64-124	14.60	30	
Hexachloro-1,3-Butadiene	9.16	0.50	ug/L	10.0		91.6	65-145	19.40	30	
Naphthalene	10.2	0.50	ug/L	10.0		102	50-134	11.80	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0186 - EPA 8260D

Instrument: NT3 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLJ0186-BSD2)				Prepared: 05-Oct-2023 Analyzed: 05-Oct-2023 11:25						
1,2,3-Trichlorobenzene	9.88	0.50	ug/L	10.0		98.8	49-133	17.80	30	
Dichlorodifluoromethane	8.46	0.20	ug/L	10.0		84.6	48-147	13.20	30	
Surrogate: 1,2-Dichloroethane-d4	5.06		ug/L	*5.00*		*101*	*80-129*			
Surrogate: Toluene-d8	4.88		ug/L	*5.00*		*97.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.16		ug/L	*5.00*		*103*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.06		ug/L	*5.00*		*101*	*80-120*			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLJ0186 - EPA 8260D

Analysis by: Analytical Resources, LLC

Petroleum Hydrocarbons - Quality Control

Batch BLJ0174 - NWTPH-HCID

Instrument: FID4 Analyst: NRB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0174-BLK1)			Prepared: 05-Oct-2023 Analyzed: 09-Oct-2023 12:32							
Gasoline Range Organics (Tol-C12)	ND	0.25	mg/L							U
Diesel Range Organics (C12-C24)	ND	0.50	mg/L							U
Motor Oil Range Organics (C24-C38)	ND	1.00	mg/L							U
Surrogate: o-Terphenyl	0.198		mg/L	*0.225*		*87.8*	*50-150*			
Surrogate: n-Triacontane	0.301		mg/L	*0.225*		*134*	*50-150*			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analysis by: Analytical Resources, LLC

Petroleum Hydrocarbons - Quality Control

Batch BLJ0174 - NWTPH-HCID

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLJ0290 - EPA 7470A

Instrument: HYDRA Analyst: ML

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0290-BLK1)				Prepared: 09-Oct-2023 Analyzed: 19-Oct-2023 11:29						
Mercury	ND	0.00100	mg/L							U
LCS (BLJ0290-BS1)				Prepared: 09-Oct-2023 Analyzed: 19-Oct-2023 11:31						
Mercury	0.00176	0.00100	mg/L	0.00200		88.0	80-120			
Duplicate (BLJ0290-DUP1)		**Source: 23J0141-01**		Prepared: 09-Oct-2023 Analyzed: 19-Oct-2023 11:36						
Mercury	ND	0.00100	mg/L		ND					U
Matrix Spike (BLJ0290-MS1)		**Source: 23J0141-01**		Prepared: 09-Oct-2023 Analyzed: 19-Oct-2023 11:38						
Mercury	ND	0.00100	mg/L	0.00100	ND	95.6	75-125			U
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BLJ0290-MSD1)		**Source: 23J0141-01**		Prepared: 09-Oct-2023 Analyzed: 19-Oct-2023 11:40						
Mercury	ND	0.00100	mg/L	0.00100	ND	87.6	75-125			U
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLJ0519 - EPA 6010D

Instrument: ICP3 Analyst: DOE

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0519-BLK1)			Prepared: 17-Oct-2023 Analyzed: 19-Oct-2023 11:55							
Beryllium	ND	0.0100	mg/L							U
Cadmium	ND	0.0020	mg/L							U
Chromium	ND	0.0100	mg/L							U
Cobalt	ND	0.0100	mg/L							U
Copper	ND	0.0030	mg/L							*, U
Iron	ND	0.200	mg/L							U
Magnesium	ND	0.500	mg/L							U
Nickel	ND	0.0100	mg/L							U
Silver	ND	0.0050	mg/L							U
Vanadium	ND	0.0030	mg/L							U
Blank (BLJ0519-BLK2)			Prepared: 17-Oct-2023 Analyzed: 20-Oct-2023 08:12							
Aluminum	ND	1.00	mg/L							U
Barium	ND	0.500	mg/L							U
Calcium	ND	0.500	mg/L							U
Manganese	ND	0.0100	mg/L							U
Nickel	ND	0.0100	mg/L							U
Potassium	ND	0.500	mg/L							U
Sodium	ND	0.500	mg/L							U
Sodium	ND	50.0	mg/L							U
Zinc	ND	0.0200	mg/L							U
LCS (BLJ0519-BS1)			Prepared: 17-Oct-2023 Analyzed: 19-Oct-2023 10:02							
Aluminum	2.02	1.00	mg/L	2.00		101	80-120			
Barium	2.03	0.500	mg/L	2.00		102	80-120			
Beryllium	0.505	0.0100	mg/L	0.500		101	80-120			
Cadmium	0.503	0.0020	mg/L	0.500		101	80-120			
Calcium	10.1	0.500	mg/L	10.0		101	80-120			
Chromium	0.497	0.0100	mg/L	0.500		99.5	80-120			
Cobalt	0.492	0.0100	mg/L	0.500		98.5	80-120			
Copper	0.507	0.0030	mg/L	0.500		101	80-120			B
Iron	2.07	0.200	mg/L	2.00		104	80-120			
Magnesium	9.98	0.500	mg/L	10.0		99.8	80-120			
Manganese	0.499	0.0100	mg/L	0.500		99.8	80-120			
Nickel	0.501	0.0100	mg/L	0.500		100	80-120			
Potassium	10.0	0.500	mg/L	10.0		100	80-120			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLJ0519 - EPA 6010D

Instrument: ICP3 Analyst: DOE

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLJ0519-BS1)				Prepared: 17-Oct-2023 Analyzed: 19-Oct-2023 10:02						
Silver	0.505	0.0050	mg/L	0.500		101	80-120			
Sodium	10.3	0.500	mg/L	10.0		103	80-120			
Vanadium	0.511	0.0030	mg/L	0.500		102	80-120			
Zinc	0.488	0.0200	mg/L	0.500		97.5	80-120			
Duplicate (BLJ0519-DUP1)		**Source: 23J0141-06**		Prepared: 17-Oct-2023 Analyzed: 19-Oct-2023 10:08						
Aluminum	ND	1.00	mg/L		ND					U
Barium	ND	0.500	mg/L		ND					U
Beryllium	ND	0.0100	mg/L		ND					U
Cadmium	ND	0.0020	mg/L		ND					U
Calcium	ND	0.500	mg/L		ND					U
Chromium	ND	0.0100	mg/L		ND					U
Cobalt	ND	0.0100	mg/L		ND					U
Copper	ND	0.0030	mg/L		ND					U
Iron	ND	0.200	mg/L		ND					U
Magnesium	ND	0.500	mg/L		ND					U
Manganese	ND	0.0100	mg/L		ND					U
Nickel	ND	0.0100	mg/L		ND					U
Potassium	ND	0.500	mg/L		ND					U
Silver	ND	0.0050	mg/L		ND					U
Sodium	ND	0.500	mg/L		ND					U
Vanadium	ND	0.0030	mg/L		ND					U
Zinc	ND	0.0200	mg/L		ND					U
Matrix Spike (BLJ0519-MS1)		**Source: 23J0141-06**		Prepared: 17-Oct-2023 Analyzed: 19-Oct-2023 10:10						
Aluminum	2.00	1.00	mg/L	2.00	ND	99.9	75-125			
Barium	2.00	0.500	mg/L	2.00	ND	100	75-125			
Beryllium	0.498	0.0100	mg/L	0.500	ND	99.6	75-125			
Cadmium	0.498	0.0020	mg/L	0.500	ND	99.5	75-125			
Calcium	9.97	0.500	mg/L	10.0	ND	99.7	75-125			
Chromium	0.492	0.0100	mg/L	0.500	ND	98.4	75-125			
Cobalt	0.486	0.0100	mg/L	0.500	ND	97.2	75-125			
Copper	0.501	0.0030	mg/L	0.500	ND	100	75-125			B
Iron	2.05	0.200	mg/L	2.00	ND	102	75-125			
Magnesium	9.86	0.500	mg/L	10.0	ND	98.6	75-125			
Manganese	0.495	0.0100	mg/L	0.500	ND	99.0	75-125			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLJ0519 - EPA 6010D

Instrument: ICP3 Analyst: DOE

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BLJ0519-MS1)	**Source: 23J0141-06**		Prepared: 17-Oct-2023 Analyzed: 19-Oct-2023 10:10							
Nickel	0.495	0.0100	mg/L	0.500	ND	99.0	75-125			
Potassium	9.98	0.500	mg/L	10.0	ND	99.8	75-125			
Silver	0.499	0.0050	mg/L	0.500	ND	99.8	75-125			
Sodium	10.2	0.500	mg/L	10.0	ND	102	75-125			
Vanadium	0.504	0.0030	mg/L	0.500	ND	101	75-125			
Zinc	0.474	0.0200	mg/L	0.500	ND	94.9	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BLJ0519-MSD1)	**Source: 23J0141-06**		Prepared: 17-Oct-2023 Analyzed: 19-Oct-2023 10:13							
Aluminum	2.03	1.00	mg/L	2.00	ND	102	75-125	1.61	20	
Barium	2.02	0.500	mg/L	2.00	ND	101	75-125	0.98	20	
Beryllium	0.503	0.0100	mg/L	0.500	ND	101	75-125	0.94	20	
Cadmium	0.503	0.0020	mg/L	0.500	ND	101	75-125	1.02	20	
Calcium	10.1	0.500	mg/L	10.0	ND	101	75-125	0.98	20	
Chromium	0.496	0.0100	mg/L	0.500	ND	99.2	75-125	0.83	20	
Cobalt	0.490	0.0100	mg/L	0.500	ND	98.0	75-125	0.84	20	
Copper	0.507	0.0030	mg/L	0.500	ND	101	75-125	1.13	20	B
Iron	2.07	0.200	mg/L	2.00	ND	104	75-125	1.01	20	
Magnesium	9.96	0.500	mg/L	10.0	ND	99.6	75-125	1.05	20	
Manganese	0.498	0.0100	mg/L	0.500	ND	99.5	75-125	0.52	20	
Nickel	0.499	0.0100	mg/L	0.500	ND	99.9	75-125	0.91	20	
Potassium	10.1	0.500	mg/L	10.0	ND	101	75-125	0.99	20	
Silver	0.504	0.0050	mg/L	0.500	ND	101	75-125	1.06	20	
Sodium	10.3	0.500	mg/L	10.0	ND	103	75-125	0.68	20	
Vanadium	0.510	0.0030	mg/L	0.500	ND	102	75-125	1.22	20	
Zinc	0.484	0.0200	mg/L	0.500	ND	96.9	75-125	2.09	20	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLJ0525 - EPA 200.8

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLJ0525-BLK1)				Prepared: 17-Oct-2023 Analyzed: 17-Oct-2023 17:57							
Antimony	121	ND	0.00300	mg/L							U
Lead	208	ND	0.0100	mg/L							U
Thallium	205	ND	0.00200	mg/L							U
Arsenic	75a	ND	0.00300	mg/L							U
Selenium	78	ND	0.0250	mg/L							U
Blank (BLJ0525-BLK2)				Prepared: 17-Oct-2023 Analyzed: 27-Oct-2023 00:43							
Antimony	121	ND	0.00300	mg/L							U
LCS (BLJ0525-BS1)				Prepared: 17-Oct-2023 Analyzed: 17-Oct-2023 18:01							
Antimony	121	ND	0.00300	mg/L	0.0250			80-120			U
Lead	208	0.0274	0.0100	mg/L	0.0250		110	80-120			
Thallium	205	0.0257	0.00200	mg/L	0.0250		103	80-120			
Arsenic	75a	0.0251	0.00300	mg/L	0.0250		100	80-120			
Selenium	78	0.0804	0.0250	mg/L	0.0800		100	80-120			
LCS (BLJ0525-BS2)				Prepared: 17-Oct-2023 Analyzed: 27-Oct-2023 00:47							
Antimony	121	0.0237	0.00300	mg/L	0.0250		94.8	80-120			
Duplicate (BLJ0525-DUP1)			**Source: 23J0141-01**	Prepared: 17-Oct-2023 Analyzed: 18-Oct-2023 00:46							
Antimony	121	ND	0.00300	mg/L		ND					U
Lead	208	ND	0.0100	mg/L		ND					U
Thallium	205	ND	0.00200	mg/L		ND					U
Arsenic	75a	ND	0.00300	mg/L		ND					U
Duplicate (BLJ0525-DUP2)			**Source: 23J0141-01**	Prepared: 17-Oct-2023 Analyzed: 27-Oct-2023 03:19							
Antimony	121	ND	0.00300	mg/L		ND					U
Duplicate (BLJ0525-DUP3)			**Source: 23J0141-01**	Prepared: 17-Oct-2023 Analyzed: 30-Oct-2023 21:32							
Selenium	78	ND	0.0250	mg/L		ND					U
Matrix Spike (BLJ0525-MS1)			**Source: 23J0141-01**	Prepared: 17-Oct-2023 Analyzed: 18-Oct-2023 00:49							
Antimony	121	ND	0.00300	mg/L	0.0250	ND		75-125			U
Lead	208	0.0260	0.0100	mg/L	0.0250	ND	104	75-125			
Thallium	205	0.0250	0.00200	mg/L	0.0250	ND	100	75-125			
Arsenic	75a	0.0256	0.00300	mg/L	0.0250	ND	102	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLJ0525 - EPA 200.8

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BLJ0525-MS2)			**Source: 23J0141-01**		Prepared: 17-Oct-2023	Analyzed: 27-Oct-2023 03:23					
Antimony	121	0.0234	0.00300	mg/L	0.0250	ND	93.6	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike (BLJ0525-MS3)			**Source: 23J0141-01**		Prepared: 17-Oct-2023	Analyzed: 30-Oct-2023 21:36					
Selenium	78	0.0786	0.0250	mg/L	0.0800	ND	98.2	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BLJ0525-MSD1)			**Source: 23J0141-01**		Prepared: 17-Oct-2023	Analyzed: 18-Oct-2023 00:54					
Antimony	121	ND	0.00300	mg/L	0.0250	ND		75-125			U
Lead	208	0.0266	0.0100	mg/L	0.0250	ND	106	75-125	2.05	20	
Thallium	205	0.0252	0.00200	mg/L	0.0250	ND	101	75-125	0.68	20	
Arsenic	75a	0.0256	0.00300	mg/L	0.0250	ND	102	75-125	0.00		
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BLJ0525-MSD2)			**Source: 23J0141-01**		Prepared: 17-Oct-2023	Analyzed: 27-Oct-2023 03:27					
Antimony	121	0.0230	0.00300	mg/L	0.0250	ND	91.9	75-125	1.77	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BLJ0525-MSD3)			**Source: 23J0141-01**		Prepared: 17-Oct-2023	Analyzed: 30-Oct-2023 21:40					
Selenium	78	0.0782	0.0250	mg/L	0.0800	ND	97.7	75-125	0.56	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 in Water	
Lead-208	NELAP,WADOE,WA-DW,DoD-ELAP
Antimony-121	NELAP,WADOE,WA-DW,DoD-ELAP
Thallium-205	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Selenium-78	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 6010D in Water	
Silver	WADOE,NELAP,DoD-ELAP
Aluminum	WADOE,NELAP,DoD-ELAP
Barium	WADOE,NELAP,DoD-ELAP,ADEC
Beryllium	WADOE,NELAP,DoD-ELAP
Calcium	WADOE,NELAP,DoD-ELAP
Cadmium	WADOE,NELAP,DoD-ELAP,ADEC
Cobalt	WADOE,NELAP,DoD-ELAP
Chromium	WADOE,NELAP,DoD-ELAP,ADEC
Copper	WADOE,NELAP,DoD-ELAP
Iron	WADOE,NELAP,DoD-ELAP
Potassium	WADOE,NELAP,DoD-ELAP
Magnesium	WADOE,NELAP,DoD-ELAP
Manganese	WADOE,NELAP,DoD-ELAP
Sodium	DoD-ELAP,WADOE,NELAP
Nickel	WADOE,NELAP,DoD-ELAP,ADEC
Vanadium	WADOE,NELAP,DoD-ELAP,ADEC
Zinc	WADOE,NELAP,DoD-ELAP
EPA 7470A in Water	
Mercury	WADOE,NELAP,DoD-ELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE

Golder Associates	Project: Landsburg	
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Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroeth	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2023 14:07

2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE

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Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE

NWTPH-HCID in Water

Gasoline Range Organics (Tol-C	NELAP,DoD-ELAP,WADOE
Diesel Range Organics (C12-C2	NELAP,DoD-ELAP,WADOE
Motor Oil Range Organics (C24-	NELAP,DoD-ELAP,WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2025
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	02/28/2025
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2024

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18300 NE Union Hill Road Suite 200	Project Number: GL9231000007.2023	**Reported:**
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Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
D	The reported value is from a dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
HC	The natural concentration of the spiked analyte is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
J	Estimated concentration value detected below the reporting limit.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

APPENDIX C

Sample Integrity Data Sheets (SIDS)

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-2

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated Pump Grundfos

Date September 26, 2023 **Time** 16:10

Media Water **Station** LMW-2

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 7.72 ft BTOC

Screened Interval: 27.9' - 38.1' BGS

Sand Pack Interval: 24.8' - 38.1' BGS

Packer Depth: N/A

Sample Description clear, slight sulfur odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
3-40 mL	VOA	VOA vial	HCl
2-1000 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-2
Date 09/26/2023
Time Begin Purge 15:26
Time Collect Sample 16:10

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
7.73	15:30	6.96	913	10.9	1.75	-16.4	0.66
7.73	15:35	6.96	913	11.1	1.52	-18.2	0.34
7.73	15:40	6.95	911	11.2	0.86	-21.1	0.87
7.73	15:45	6.95	910	11	0.53	-23.7	0.55
7.73	15:50	6.94	913	10.9	0.48	-25.2	1.95
7.73	15:58	6.98	915	10.9	0.38	-45.5	0.28
7.73	16:00	6.95	912	10.9	0.38	-40.0	0.42
7.73	16:05	6.94	908	10.9	0.36	-36.8	0.48
7.73	16:10	6.94	911	10.9	0.34	-36.2	1.15

Comments:
Duplicate (LMW-2-0923-D) collected at 16:20.

Grundfos: ~80 Hz
Packer: N/A
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 1000 mL/min

Sampler _____ **Date** September 26, 2023

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-3

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated Pump Grundfos

Date September 27, 2023 **Time** 10:45

Media Water **Station** LMW-3

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 13.7 ft BTOC

Screened Interval: 49.8' - 64.8' BGS

Sand Pack Interval: 47.1' - 64.8' BGS

Packer Depth: 39.33' BGS

Sample Description clear, no odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
3-40 mL	VOA	VOA vial	HCl
2-1000 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-3
Date 09/27/2023
Time Begin Purge 09:55
Time Collect Sample 10:45

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
19.2	10:00	7.89	306.8	10.9	1.65	178	.91
19.55	10:05	7.87	306.1	10.9	1.04	180.5	.45
19.9	10:10	7.86	306.4	10.9	0.69	176.7	.36
20.04	10:15	7.86	308.6	10.8	0.48	160.6	1
20.09	10:25	7.83	343.9	10.8	0.37	120.2	.32
20.09	10:28	7.83	309.7	10.8	0.37	106.8	.28
20.1	10:31	7.82	305.9	10.8	0.35	83.2	.21
20.1	10:34	7.82	304.8	10.8	0.34	73.3	.69
20.1	10:37	7.8	308.6	10.8	0.28	63.5	.31
20.1	10:40	7.8	303.6	10.8	0.25	53.9	.69

Comments:
Lowered to 119 Hz at start of readings.

Grundfos: ~135 Hz
Packer: 130 psi
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 1750 mL/min

Sampler _____ **Date** September 27, 2023

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-4

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated Pump Grundfos

Date September 26, 2023 **Time** 14:30

Media Water **Station** LMW-4

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 10.51 ft BTOC

Screened Interval: 195' - 209.7' BGS

Sand Pack Interval: 189' - 209.7' BGS

Packer Depth: 187.3' BGS

Sample Description clear, slight sulfur odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
3-500 mL	Total Metals	HDPE	HNO3
9-40 mL	VOA	VOA vial	HCl
4-1000 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
3-1000 mL	1,4-dioxane	Glass amber	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-4
Date 09/26/2023
Time Begin Purge 14:09
Time Collect Sample 14:30

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
10.56	14:10	7.58	907	11	1.56	5.4	0.65
10.56	14:15	7.15	916	10.4	1.23	-52.6	0.35
10.56	14:20	7.08	917	10.4	1.03	-59.2	0.35
10.56	14:25	7.06	918	10.4	0.9	-61.2	0.29
10.56	14:30	7.05	918	10.4	0.91	-61.5	0.34

Comments:
MS/MSD collected, except for -Gx, -Dx.

Grundfos: 80 Hz
Packer: 110 psi
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 750 mL/min

Sampler _____ **Date** September 26, 2023

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-5

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated Pump Grundfos

Date September 27, 2023 **Time** 11:45

Media Water **Station** LMW-5

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 15.11 ft BTOC

Screened Interval: 231.8' - 241.8' BGS

Sand Pack Interval: 231.8' - 241.8' BGS

Packer Depth: 222.11' BGS

Sample Description clear, no odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
3-40 mL	VOA	VOA vial	HCl
2-1000 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-5
Date 09/27/2023
Time Begin Purge 11:21
Time Collect Sample 11:45

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
15.11	11:25	6.99	672.9	10.2	0.48	-10.3	.76
15.11	11:30	6.98	673.4	10.4	0.43	-21.6	1.7
15.11	11:35	6.98	673.6	10.4	0.37	-29.5	.65
15.11	11:40	6.98	673.6	10.5	0.34	-38.2	1.34
15.11	11:45	6.98	674.8	10.5	0.35	-38.3	.26

Comments:

Grundfos: ~135 Hz
Packer: 110 psi
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 2700 mL/min

Sampler _____ **Date** September 27, 2023

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-6

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated Pump Grundfos

Date September 28, 2023 **Time** 10:15

Media Water **Station** LMW-6

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 43.06 ft BTOC

Screened Interval: 90.9' - 105.9' BGS

Sand Pack Interval: 82.5' - 105.9' BGS

Packer Depth: 81.22' BGS

Sample Description clear, no odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
3-40 mL	VOA	VOA vial	HCl
2-1000 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-6
Date 09/28/2023
Time Begin Purge 09:28
Time Collect Sample 10:15

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
46.35	09:30	7.04	259.3	9	2.6	72.0	274
49.2	09:35	7.04	262.2	9.5	2.15	12.6	16.7
51.08	09:40	7.01	260.2	9.7	2.39	-14.5	8.15
52.78	09:45	6.97	257.1	9.7	2.23	-24.1	3.75
54.06	09:50	6.97	258.5	9.8	2.04	-30.9	26.4
55.02	09:55	6.95	260.1	9.9	1.8	-36.0	3.82
54.45	10:00	6.97	260.1	9.8	2.06	-36.1	8.53
55.82	10:05	6.92	258.8	10	1.23	-44.4	4.64
56.32	10:10	6.92	260	10	1.31	-45.2	4.72
56.8	10:13	6.93	260	10	1.38	-45.8	3.68

Comments:

Grundfos: 180 Hz
Packer: 110 psi
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 2500 mL/min

Sampler _____ **Date** September 28, 2023

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-7

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated Pump Grundfos

Date September 28, 2023 **Time** 15:00

Media Water **Station** LMW-7

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 228.75 ft BTOC

Screened Interval: 239.6' - 253.7' BGS

Sand Pack Interval: N/A

Packer Depth: N/A

Sample Description clear, no odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
3-40 mL	VOA	VOA vial	HCl
2-1000 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-7
Date 09/28/2023
Time Begin Purge 14:11
Time Collect Sample 15:00

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
228.75	14:15	7.53	478.2	10.6	1.69	26.9	11.2
228.75	14:20	7.51	475.5	13.4	1.12	16.8	7.28
228.75	14:25	7.51	475	13.4	0.84	10.3	5.17
228.75	14:30	7.51	475.6	13.6	0.67	-5.3	3.69
228.75	14:35	7.51	477.5	13.6	0.63	-20.0	2.47
228.75	14:40	7.51	478.4	13.7	0.62	-28.4	2.33
228.75	14:45	7.43	496.6	13.7	0.56	-51.7	2.29
228.75	14:50	7.35	510.8	13.7	0.57	-69.8	2.12
228.75	14:53	7.32	514.7	13.8	0.59	-73.4	2.09
228.75	14:56	7.3	517.4	13.8	0.59	-75.6	1.53

Comments:
Increased to 342 Hz
Grundfos: 320 Hz
Packer: N/A
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 1500 mL/min

Sampler _____ **Date** September 28, 2023

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-8

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler New Tubing and Peristaltic Pump

Date September 27, 2023 **Time** 14:15

Media Water **Station** LMW-8

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 4.7 ft BTOC

Screened Interval: 8' - 13' BGS

Sand Pack Interval: 6' - 13' BGS

Packer Depth: N/A

Sample Description clear, no odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
3-40 mL	VOA	VOA vial	HCl
2-1000 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-8
Date 09/27/2023
Time Begin Purge 13:47
Time Collect Sample 14:15

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
7.3	13:50	6.99	401.4	13.1	1.52	-84.8	26.6
7.74	13:55	6.92	435.5	12.9	0.99	-77.9	14.0
7.74	14:00	6.98	602.3	12.6	6.95	-51.4	6.02
7.74	14:05	7.02	616.7	12.6	7.79	-46.2	2.13
7.74	14:10	7.03	619.3	12.7	7.9	-45.3	1.23
7.74	14:15	7.03	620.2	12.7	8.04	-44.8	1.55

Comments:
Orange iron bacteria on dedicated tubing.

Grundfos: N/A
Packer: N/A
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 250 mL/min

Sampler _____ **Date** September 27, 2023

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-9

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated QED Bladder

Date September 27, 2023 **Time** 13:05

Media Water **Station** LMW-9

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 100.07 ft BTOC

Screened Interval: 149' - 159' BGS

Sand Pack Interval: 143.5' - 159' BGS

Packer Depth: N/A

Sample Description clear, no odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
3-40 mL	VOA	VOA vial	HCl
2-1000 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-9
Date 09/27/2023
Time Begin Purge 12:42
Time Collect Sample 13:05

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
100.12	12:45	7.11	645.4	10.2	1.64	7.2	0.91
100.12	12:50	7.09	646	10.3	0.69	-55.6	0.77
100.12	12:55	7.09	645.9	10.3	0.58	-62.6	0.65
100.12	13:00	7.09	645.8	10.3	0.55	-65.7	0.48
100.12	13:05	7.09	645.7	10.3	0.55	-67.2	0.64

Comments:

Grundfos: N/A
Packer: N/A
Tank: 130
Throttle: 95
CPM: 2
CID: 51
Flow Rate: 500 mL/min

Sampler _____ **Date** September 27, 2023

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-10

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated QED Bladder

Date September 26, 2023 **Time** 13:30

Media Water **Station** LMW-10

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 0.80 ft BTOC

Screened Interval: 267' - 289' BGS

Sand Pack Interval: 258' - 289' BGS

Packer Depth: N/A

Sample Description clear, no odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
3-40 mL	VOA	VOA vial	HCl
2-1000 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-10
Date 09/26/2023
Time Begin Purge 12:47
Time Collect Sample 13:30

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
0.8	12:50	8.75	327.1	11.6	0.41	-64.7	0.81
1.94	12:55	8.77	326.3	11.5	0.35	-76.3	1.35
2.61	13:00	8.78	326.6	11.6	0.31	-94.7	1.22
2.96	13:05	8.78	326.1	11.8	0.29	-107.1	0.87
3.34	13:10	8.78	326.5	11.5	0.24	-118.5	1.31
3.95	13:15	8.77	326	11.7	0.23	-127.7	0.77
4.51	13:20	8.78	325.8	11.8	0.21	-134.8	0.77
4.85	13:25	8.77	326	11.9	0.2	-142.3	0.76
5.1	13:30	8.78	326.1	11.9	0.2	144.0	1.04

Comments:

Grundfos: N/A
Packer: N/A
Tank: 110
Throttle: 40
CPM: 2
CID: 50
Flow Rate: 350 mL/min

Sampler _____ **Date** September 26, 2023

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-11

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated QED Bladder

Date September 28, 2023 **Time** 13:15

Media Water **Station** LMW-11

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 157.96 ft BTOC

Screened Interval: 696' - 707' BGS

Sand Pack Interval: 688' - 707' BGS

Packer Depth: N/A

Sample Description clear, no odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
3-40 mL	VOA	VOA vial	HCl
2-1000 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-11
Date 09/28/2023
Time Begin Purge 12:45
Time Collect Sample 13:15

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
157.96	12:50	7.39	521.6	10.3	4.35	-3.2	1.81
157.96	12:55	7.3	535.7	10	1.77	-31.7	1.22
157.96	13:00	7.29	536.9	10	1.34	-42.2	1.48
157.96	13:05	7.28	537.7	10	1.11	-53.3	1.74
157.96	13:10	7.27	539.2	10.1	1.06	-59.7	1.41
157.96	13:15	7.27	539.2	10.1	1.05	-63.9	1.35

Comments:

Grundfos: N/A
Packer: N/A
Tank: 130
Throttle: 110
CPM: 1
CID: 15
Flow Rate: 350 mL/min

Sampler _____ **Date** September 28, 2023

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-12

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated QED Bladder

Date September 26, 2023 **Time** 10:35

Media Water **Station** LMW-12

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 12.07 ft BTOC

Screened Interval: 15' - 25' BGS

Sand Pack Interval: 11' - 25' BGS

Packer Depth: N/A

Sample Description clear, no odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
3-40 mL	VOA	VOA vial	HCl
2-1000 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-12
Date 09/26/2023
Time Begin Purge 10:04
Time Collect Sample 10:35

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
12.07	10:10	6.71	473.7	10.7	1.23	-59.3	11.9
12.07	10:15	6.69	488.3	10.3	0.56	-86.1	10.6
12.07	10:20	6.71	489.6	10.2	0.54	-93.9	9.62
12.07	10:25	6.72	489.7	10.1	0.51	-96.9	9.03
12.07	10:30	6.72	490.4	10.1	0.52	-97.6	8.72
12.07	10:35	6.73	490.7	10.1	0.52	-98.2	8.45

Comments:

Grundfos: N/A
Packer: N/A
Tank: 110
Throttle: 20
CPM: 2
CID: 47
Flow Rate: 300 mL/min

Sampler _____ **Date** September 26, 2023

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-13R

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated QED Bladder

Date September 26, 2023 **Time** 11:40

Media Water **Station** LMW-13R

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 12.59 ft BTOC

Screened Interval: 115' - 140' BGS

Sand Pack Interval: 110' - 150' BGS

Packer Depth: N/A

Sample Description clear, slight sulfur odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
3-40 mL	VOA	VOA vial	HCl
2-1000 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-13R
Date 09/26/2023
Time Begin Purge 11:00
Time Collect Sample 11:40

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
12.59	11:05	6.95	503.6	11.3	2.16	-88.5	10.6
12.59	11:10	7.34	707	12.4	4.43	-80.9	14.6
12.59	11:15	7.47	755	12.5	4.17	-80.7	6.72
12.59	11:20	7.5	776	12.5	4.47	-77.0	6.19
12.59	11:25	7.52	783	12.6	4.63	-70.8	5.11
12.59	11:30	7.53	789	12.7	4.69	-65.1	5.34
12.59	11:35	7.52	794	12.7	4.72	-63.5	3.30

Comments:

Grundfos: N/A
Packer: N/A
Tank: 110
Throttle: 35
CPM: 2
CID: 48
Flow Rate: 250 mL/min

Sampler _____ **Date** September 26, 2023

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-14

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated QED Bladder

Date September 28, 2023 **Time** 11:15

Media Water **Station** LMW-14

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 166.2 ft BTOC

Screened Interval: 156.5' - 172.3' BGS

Sand Pack Interval: 152.5' - 175.8' BGS

Packer Depth: N/A

Sample Description clear, no odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
3-40 mL	VOA	VOA vial	HCl
2-1000 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-14
Date 09/28/2023
Time Begin Purge 10:49
Time Collect Sample 11:15

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
166.56	10:50	6.75	1,096	12.6	3.7	88.1	4.00
166.56	10:55	6.66	1,079	11	2.09	19.9	3.41
166.56	11:00	6.66	1,072	10.7	2	-28.3	3.31
166.56	11:05	6.66	1,049	10.6	0.87	-42.0	4.10
166.56	11:10	6.66	1,025	10.6	0.89	-46.6	2.89
166.56	11:15	6.66	1,015	10.6	0.75	-48.9	2.60

Comments:

Grundfos: N/A
Packer: N/A
Tank: 140
Throttle: 115
CPM: 2
CID: 49
Flow Rate: 500 mL/min

Sampler _____ **Date** September 28, 2023

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-15

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated QED Bladder

Date September 28, 2023 **Time** 12:15

Media Water **Station** LMW-15

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 152.01 ft BTOC

Screened Interval: 235' - 245' BGS

Sand Pack Interval: 231' - 245' BGS

Packer Depth: N/A

Sample Description clear, no odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
3-40 mL	VOA	VOA vial	HCl
2-1000 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-15
Date 09/28/2023
Time Begin Purge 11:48
Time Collect Sample 12:15

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
152.2	11:50	7.86	489.7	11.7	12.57	37.3	4.05
152.2	11:55	7.35	487.2	10	3.16	-70.0	4.72
152.2	12:00	7.4	490.7	491.1	1.6	-88.3	2.70
152.2	12:05	7.44	499.7	9.7	1.14	-105.4	1.85
152.2	12:10	7.45	501.2	9.7	0.99	-112.7	2.47
152.2	12:15	7.45	502.9	9.7	0.94	-118.3	1.72

Comments:

Grundfos: N/A
Packer: N/A
Tank: 130
Throttle: 95
CPM: 2
CID: 53
Flow Rate: 400 mL/min

Sampler _____ **Date** September 28, 2023

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-FB

Sampling Location Direct pour/end of dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Direct Pour/Peristaltic Pump with New Tubing

Date September 27, 2023 **Time** 14:12

Media Water **Station** near LMW-8

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: N/A ft BTOC

Screened Interval: N/A

Sand Pack Interval: N/A

Packer Depth: N/A

Sample Description clear, no odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
3-40 mL	VOA	VOA vial	HCl
2-1000 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-FB
Date 09/27/2023
Time Begin Purge N/A
Time Collect Sample 14:12

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)

Comments:
Field blank collected as direct pour from lab-provided DI and VOC-free DI water.

Grundfos: N/A
Packer: N/A
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: N/A mL/min

Sampler _____ **Date** September 27, 2023

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-FB

Sampling Location Direct pour/end of dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler

Date September 28, 2023 **Time** 14:30

Media Water **Station** near LMW-7

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: N/A ft BTOC

Screened Interval: N/A

Sand Pack Interval: N/A

Packer Depth: N/A

Sample Description clear, no odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
3-40 mL	VOA	VOA vial	HCl
2-1000 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-FB
Date 09/28/2023
Time Begin Purge N/A
Time Collect Sample 14:30

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)

Comments:
Second Field Blank collected as direct pour from lab-provided DI water and VOC-free water.

Grundfos: N/A
Packer: N/A
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: N/A mL/min

Sampler _____ **Date** September 28, 2023

Supervisor _____ **Date** _____

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