December 28, 2020 Project No. 923-1000-006.2020

Mr. Bill Kombol
Landsburg PLP Group
31407 Highway 169
PO Box 10
Black Diamond, WA 98010

LANDSBURG MINE SITE SHORT-TERM COMPLIANCE MONITORING REPORT SEPTEMBER 2020 SAMPLING

Dear Bill,

The Compliance Monitoring Plan (CMP) (Golder 2017)[1] requires short-term compliance monitoring be conducted during the remediation to ensure that there are no adverse effects to the environment from remediation activities. The CMP states that short-term compliance monitoring will commence when the trench-backfilling begins and will continue for a period of four weeks following completion of the backfilling. To meet this requirement Golder Associates Inc. (Golder) completed short-term compliance monitoring events at the Landsburg Mine Site (the Site) starting in September 2020 and extending for four weeks following completion of the backfilling, which was completed on November 2, 2020. This letter report presents the results of the two short-term monitoring events completed in September 2020. The first event was conducted from September 16 to 18, 2020, 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. The first event also qualified as a quarterly monitoring event for the North End Wells (LMW-2, LMW-4, LMW-10, LMW-12, LMW-13R). The second event was conducted from September 28 to 29, 2020, and included measurements of groundwater quality parameters from the monitoring wells.

Figure 1 presents the locations of the monitoring wells. Figures 2A and 2B present 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.

[1] Golder Associates Inc. (Golder). 2017. Exhibit D of the Consent Decree – Compliance Monitoring Plan Landsburg Mine Site MTCA Remediation Project, Ravensdale, Washington. Prepared by Golder Associates Inc. June 7.

Groundwater sampling was conducted in accordance with the CMP (Golder 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 and associated analyses of groundwater samples.
    - Groundwater samples were analyzed for volatile organic compounds (VOCs; United States Environmental Protection Agency [EPA] Method 8260D) and a total petroleum hydrocarbon (TPH) identification scan (NWTPH-HCID). In accordance with the CMP, the groundwater samples collected during the September 16 to 18, 2020 event were analyzed for VOCs and TPH.
    - Groundwater samples collected from North End wells (LMW-2, LMW-4, LMW-10, LMW-12, LMW-13R) during the September 16 to 18, 2020 event were also analyzed for 1,4-dioxane (EPA Method 8270E). Quarterly monitoring for all Site groundwater monitoring wells located on the north end of the Site has been conducted since May 2018 to provide additional data on the detection of 1,4-dioxane in LMW-2, LMW-4, and LMW-12.

Appendix A presents the laboratory analytical reports and the data validation report with added data qualifiers noted. Field sampling activities were documented on Sample Integrity Data Sheets (SIDS), provided in Appendix B. Tables 1A and 1B present depths to groundwater measured during the two events and calculated static water level elevations.

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 Incorporated (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 reported for sample LMW-2-0920 and its duplicate LMW-2-0920D were 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 results for 2-chloroethyl vinyl ether for LMW-2-0920 and its duplicate LMW-2-0920D were rejected. 2-chloroethyl vinyl ether was not detected during the September 2020 sampling round and 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 2 presents the field parameter measurements and laboratory analytical results for each groundwater sample. Laboratory analyses did not detect any total petroleum hydrocarbon in any of the groundwater samples.

There were no parameters detected in groundwater above the triggers level concentrations prescribed in the CMP (Golder 2017). The only parameters detected in groundwater samples above the reporting limit during the September 2020 sampling event were acetone, carbon disulfide, and 1,1-dichloroethane.

Acetone was detected in LMW-8 (5.94 µg/L) marginally above the 5 µg/L detection limit. Detected concentrations of acetone are considerably lower than the MTCA Method B groundwater cleanup level of 7,200 µg/L. Acetone is a common lab contaminant and the detected concentration in LMW-8 is not indicative of groundwater conditions at the Site.

Carbon disulfide was detected in LMW-10 (0.14 µg/L) and LMW-15 (0.13 µg/L). All detected concentrations of carbon disulfide are considerably lower than the MTCA Method A groundwater cleanup level of 800 µg/L. Carbon disulfide has been detected at these low levels in Site groundwater in previous sampling events. The detection of carbon disulfide is attributed to being present in the coal bed material as a natural constituent.

1,1-dichloroethane was detected in LMW-12 at a concentration of 0.24 µg/L. The detected concentration is significantly less than the MTCA Method B groundwater cleanup level of 1,600 µg/L.

Table 3 presents the groundwater quality parameters (pH, specific conductance, temperature, dissolved oxygen, ORP, and turbidity) for the events completed in 2020. Groundwater quality parameters measured during the remedial actions are within historical norms.

If you have any questions or require any additional information, please contact Gary Zimmerman at (425) 883-0777.

Sincerely,

Golder Associates Inc.

Joseph Xi
Senior Project Engineer

Gary Zimmerman
Principal

JX/GZ/sb

Attachments: Table 1A: Groundwater Elevation Data, Landsburg Mine Site, September 16, 2020
Table 1B: Groundwater Elevation Data, Landsburg Mine Site, September 29, 2020
Table 2: September 2020 Groundwater Analytical Results Landsburg Mine Site
Table 3: Short-Term Monitoring Groundwater Parameter Trends
Figure 1: Groundwater Monitoring Locations
Figure 2A: Cross-Section along Strike at Coal Seam, September 16, 2020
Figure 2B: Cross-Section along Strike at Coal Seam, September 29, 2020
Appendix A: Laboratory Analytical Reports Data Validation and Quality Assurance / Quality Control Review Memorandum and September 2020 Laboratory Analytical Report
Appendix B: Sample Integrity Data Sheets (SIDS)

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Tables

Table 1A: Groundwater Elevation Data, Landsburg Mine Site, September 16, 2020

	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	9/16/2020	9/16/2020	9/16/2020	9/16/2020	9/16/2020	9/16/2020	9/16/2020	9/16/2020	9/16/2020	9/16/2020	9/16/2020	9/16/2020	9/16/2020	9/16/2020	9/16/2020
Time of data collection	11:10 AM	8:53 AM	10:28 AM	9:28 AM	10:33 AM	10:55 AM	10:02 AM	10:42 AM	10:23 AM	9:36 AM	11:42 AM	9:45 AM	9:42 AM	11:23 AM	11:52 AM
Measured to Top of PVC (ft btc)	144.91	8.31	12.95	9.80	14.48	41.20	214.01	5.15	100.29	0.30	158.11	12.26	12.80	161.23	152.18
Surveyed Elevation															
Top of PVC (ft asl)	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 asl)	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 asl)	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 asl)	**620.45**	**609.48**	**643.80**	**609.47**	**643.79**	**591.13**	**557.50**	**641.82**	**643.70**	**618.68**	**644.08**	**613.09**	**613.06**	**643.89**	**644.28**

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 asl = feet above sea level

Table 1B: Groundwater Elevation Data, Landsburg Mine Site, September 29, 2020

	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	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020
Time of data collection	2:58 PM	2:10 PM	1:45 PM	2:15 PM	1:51 PM	2:37 PM	1:31 PM	1:55 PM	1:42 PM	2:21 PM	3:12 PM	2:26 PM	2:29 PM	3:31 PM	3:23 PM
Measured to Top of PVC (ft btc)	143.67	7.88	13.01	9.37	14.55	42.15	214.33	5.89	100.40	0.80	158.25	10.48	11.16	161.27	152.33
Surveyed Elevation															
Top of PVC (ft asl)	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 asl)	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 asl)	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 asl)	**621.69**	**609.91**	**643.74**	**609.90**	**643.72**	**590.18**	**557.18**	**641.08**	**643.59**	**618.18**	**643.94**	**614.87**	**614.70**	**643.85**	**644.13**

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 asl = feet above sea level

Table 2: September 2020 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	Trip Blank
		9/16/2020	9/16/2020	9/18/2020	9/16/2020	9/18/2020	9/17/2020	9/17/2020	9/18/2020	9/17/2020	9/16/2020	9/17/2020	9/16/2020	9/16/2020	9/17/2020	9/17/2020	9/16/2020	-
Field Parameter																		
Temperature	°C	12.0	-	11.6	11.7	11.1	10.4	15.5	14.0	11.0	11.5	10.4	11.4	11.7	11.3	10.2	-	-
pH	stnd	6.90	-	7.49	6.98	6.84	6.56	7.48	6.82	7.04	8.32	7.09	6.67	7.31	6.64	7.39	-	-
Conductivity	uS/cm	761	-	240	753	542	197	409	499	522	277	412	615	697	880	369	-	-
Dissolved Oxygen	mg/L	0.01	-	0.09	0.03	0.00	0.10	0.27	0.14	0.17	0.00	0.37	0.14	0.03	0.08	0.35	-	-
ORP	mV	-60.5	-	163.1	-31.7	-76.5	-27.1	-94.8	-111.2	-72.9	-165.5	-78.6	-81.0	-130.2	-51.7	-138.4	-	-
Turbidity	NTU	0.19	-	0.17	0.51	0.24	2.32	1.80	1.91	0.17	0.31	0.66	6.05	0.56	8.87	2.71	-	-
Volatile Organic Compounds (VOCs)																		
Acetone	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	**5.94**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acrolein	ug/L	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
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 UJ	1 UJ
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
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
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
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
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
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
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
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
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
Carbon Disulfide	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	**0.14**	0.1 U	0.1 U	0.1 U	0.1 U	**0.13**	0.1 U	0.1 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
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
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	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Chloroethyl vinyl ether	ug/L	0.5 R	0.5 R	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
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
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
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
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
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
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
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
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
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
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
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
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
1,1-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	**0.24**	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
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
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
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
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
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
2,2-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
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
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
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
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
Hexachlorobutadiene	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
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
Iodomethane	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

Table 2: September 2020 Groundwater Analytical Results Landsburg Mine Site

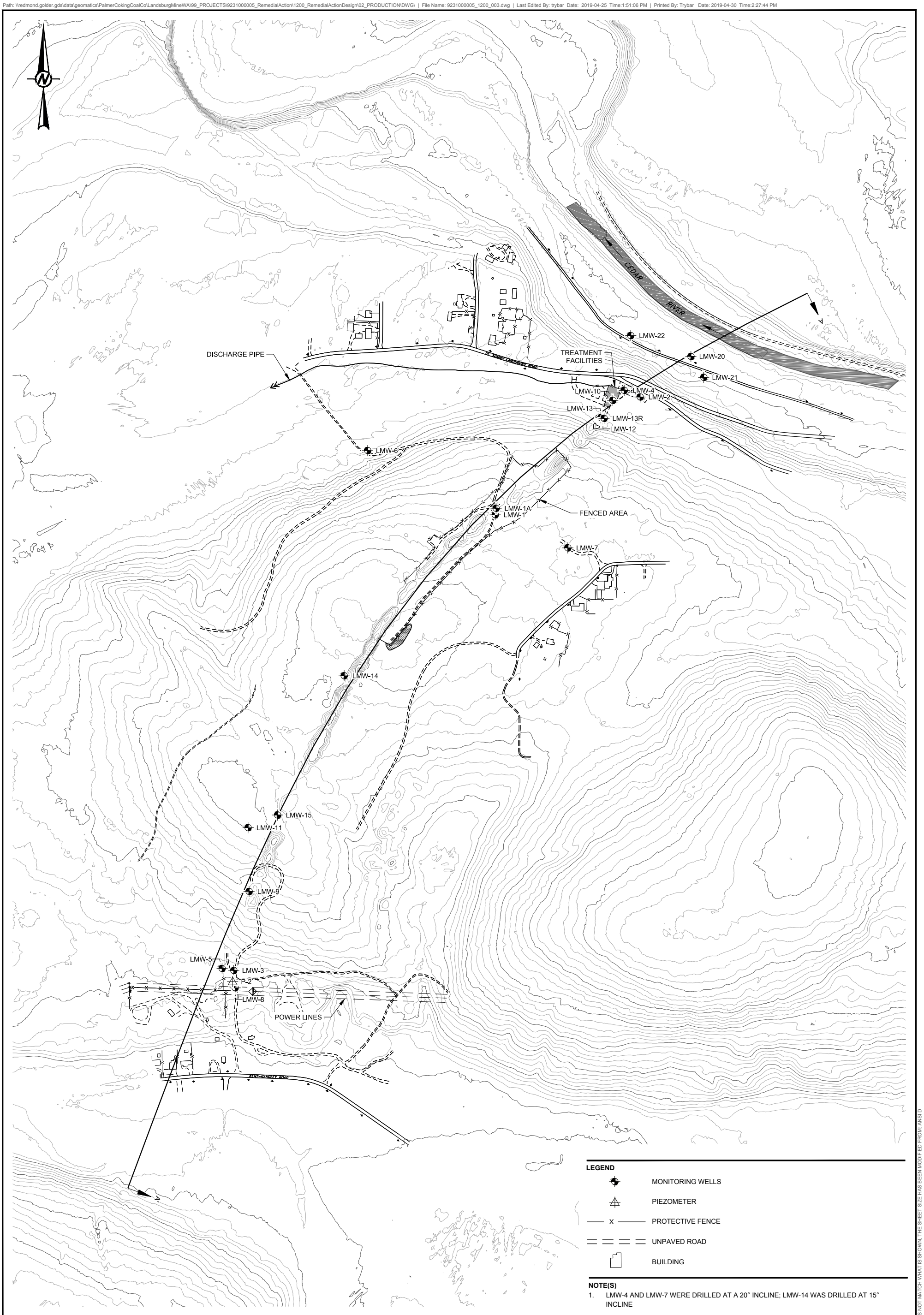
ANALYTE	UNITS	LMW-2	LMW-2 Duplicate	LMW-3	LMW-4	LMW-5	LMW-6	LMW-7	LMW-8	LMW-9	LMW-10	LMW-11	LMW-12	LMW-13R	LMW-14	LMW-15	Field Blank	Trip Blank
Cumene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
p-Isopropyltoluene	ug/L	0.2 U	0.2 U	0.2 U	0.2 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
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
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
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
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
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
1,2,3-Trichlorobenzene	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
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
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
1,1,2,2-Tetrachloroethane	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
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
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
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
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
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
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
1,2,3-Trichloropropane	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
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
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
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
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
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
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
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
Semi-Volatile Organic Compounds (SVOCs)																		
1,4-Dioxane	ug/L	**1.6**	**1.7**	NA	**1.8**	NA	NA	NA	NA	NA	0.4 U	NA	**0.6**	0.4 U	NA	NA	0.4 U	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	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	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	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.
NA - Not Analyzed

Table 3: Short-Term Monitoring Groundwater Parameter Trends

Well	Date	Temperature (°C)	pH	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
LMW-2	3/11/2020	10.3	7.57	748	0.31	-244.6	1.58
LMW-2	6/25/2020	11.3	6.79	777	0.43	-124.8	0.33
LMW-2	9/16/2020	12.0	6.9	761	0.01	-60.5	0.19
LMW-2	9/28/2020	11.2	6.48	652	0.58	-133.1	0.45
LMW-3	3/12/2020	10.8	7.68	224	0.33	-63.7	0.61
LMW-3	9/18/2020	11.6	7.49	240.3	0.09	163.1	0.17
LMW-3	9/29/2020	11.1	7.38	207.2	0.63	87.5	0.28
LMW-4	3/10/2020	10.0	7.76	710	0.36	-98.5	0.42
LMW-4	6/25/2020	11.0	6.82	746	0.43	-131.2	0.20
LMW-4	9/16/2020	11.7	6.98	755	0.03	-31.7	0.51
LMW-4	9/28/2029	10.7	6.71	630	0.62	-142.9	0.21
LMW-5	3/12/2020	10.5	6.56	507	0.3	-117.4	0.67
LMW-5	9/18/2020	11.1	6.84	542	0	-76.5	0.24
LMW-5	9/29/2020	10.6	6.64	445.3	0.6	-41.3	0.25
LMW-6	3/11/2020	9.5	7.73	184	0.36	-92.8	0.49
LMW-6	9/17/2020	10.4	6.56	197	0.1	-27.1	2.32
LMW-6	9/28/2020	10.0	6.75	159	0.64	-79.7	1.42
LMW-7	3/10/2020	13.6	7.44	414	0.52	-63.1	1.69
LMW-7	9/17/2020	15.5	7.48	409	0.27	-94.8	1.8
LMW-7	9/29/2020	13.9	7.15	371	0.82	-80.1	1.08
LMW-8	3/12/2020	8.8	6.13	343	0.93	-81.9	11.7
LMW-8	4/21/2020	10.1	6.57	369	0.05	-78.1	5.23
LMW-8	9/18/2020	14.0	6.82	499	0.14	-111.2	1.91
LMW-8	9/29/2020	13.6	6.67	440	0.59	-95.3	0.71
LMW-9	3/12/2020	10.2	7.13	466	0.43	-106.5	0.74
LMW-9	9/17/2020	11.0	7.04	522	0.17	-72.9	0.17
LMW-9	9/29/2020	10.3	6.69	479	0.83	-35.5	0.69
LMW-10	3/10/2020	9.1	9.19	261	0.31	-242.3	0.13
LMW-10	6/25/2020	12.3	8.59	290	0.42	-213.0	0.73
LMW-10	9/16/2020	11.5	8.32	277	0	-165.5	0.31
LMW-10	9/28/2020	11.2	8.5	219	0.59	-240.9	0.23
LMW-11	3/11/2020	9.6	8.38	382	0.62	-90.5	1.7
LMW-11	9/17/2020	10.4	7.09	412	0.37	-78.6	0.7
LMW-11	9/28/2020	10.1	7.04	300	1.00	-99.5	0.3
LMW-12	3/10/2020	9.8	7.08	614	0.29	-111.0	12.0
LMW-12	6/25/2020	11.4	6.58	578	0.39	-84.2	1.05
LMW-12	9/16/2020	11.4	6.67	615	0.14	-81.0	6.05
LMW-12	9/28/2020	11.2	6.37	319	0.58	-88.8	7.62
LMW-13R	3/10/2020	9.5	7.36	663	0.35	-147.7	1.08
LMW-13R	6/25/2020	11.2	7.33	692	0.42	-121.8	0.76
LMW-13R	9/16/2020	11.7	7.31	697	0.03	-130.2	0.56
LMW-13R	9/28/2020	11.5	7.14	550	1.17	-131	0.34
LMW-14	3/11/2020	9.5	7.64	1596	0.33	-86.8	3.44
LMW-14	4/21/2020	10.0	6.33	1262	0.08	-56.3	2.45
LMW-14	9/17/2020	11.3	6.64	880	0.08	-51.7	8.87
LMW-14	9/28/2020	11.2	6.54	702	0.6	-83.2	4.36
LMW-15	3/11/2020	9.1	8.56	346	0.62	-157.7	2.55
LMW-15	9/17/2020	10.2	7.39	369	0.35	-138.4	2.71
LMW-15	9/28/2020	9.9	7.28	278	0.91	-159.4	1.07

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
GOLDER

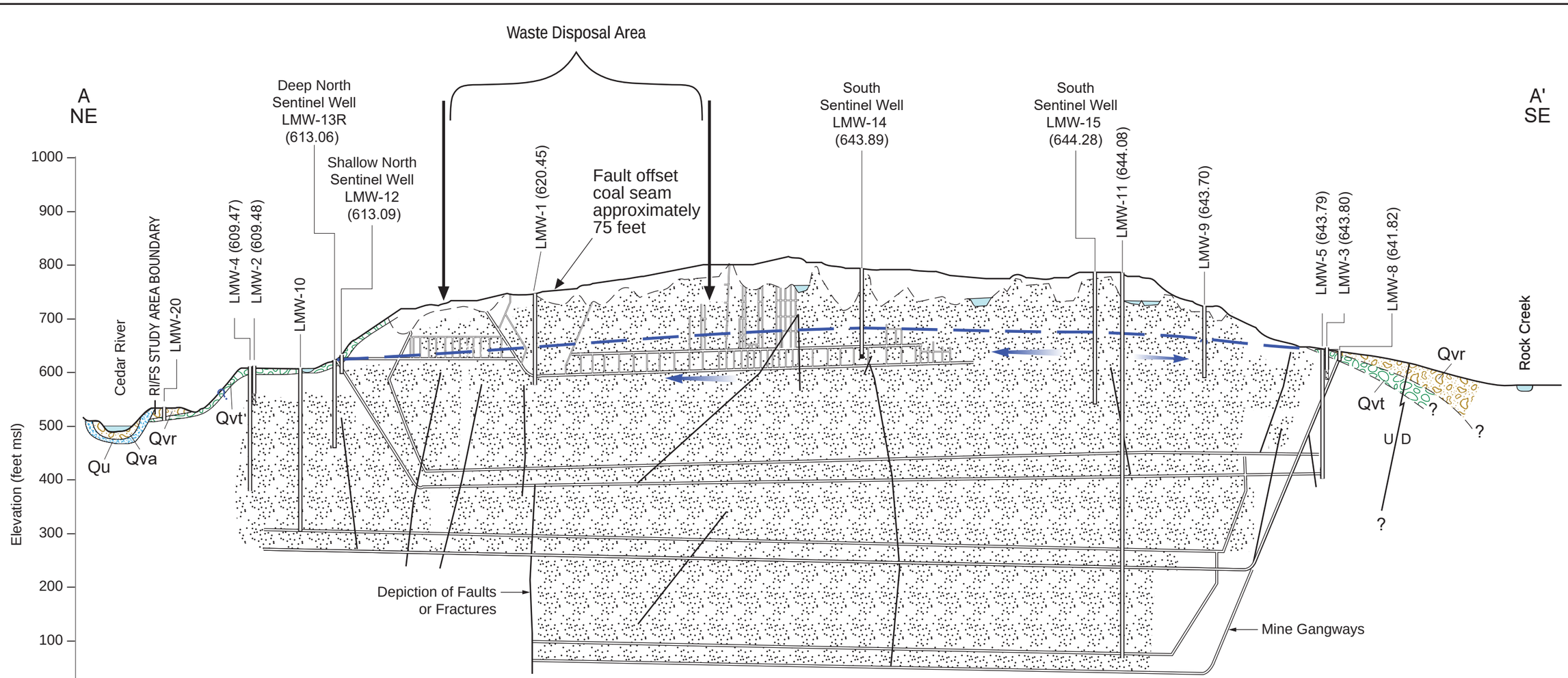
YYYY-MM-DD	2019-04-25
DESIGNED	XXX
PREPARED	XXX
REVIEWED	XXX
APPROVED	XXX

PROJECT
LANDSBURG MINE SITE
MTCA REMEDIAL ACTION

TITLE
SITE MAP

PROJECT NO.	PHASE	REV.	SHEET
9231000005	1200	A	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D
0 1 in



EXPLANATION

- Potentiometric surface
- Outline of trench bottom
- LMW-2 (609.99) Well ID (water level in ft. amsl)
- Qvt Till, compact mixture of gravel occasional boulders in clayey silty sand matrix
- Sandstone
- Surface water feature
- 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

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: Vertical to horizontal scale ratio is 2.5:1
Wells are project normal into the strike of the Cross-Section A-A' Groundwater elevation obtained 9/16/2020

CLIENT
LANDSBURG PLP GROUP

CONSULTANT
GOLDER

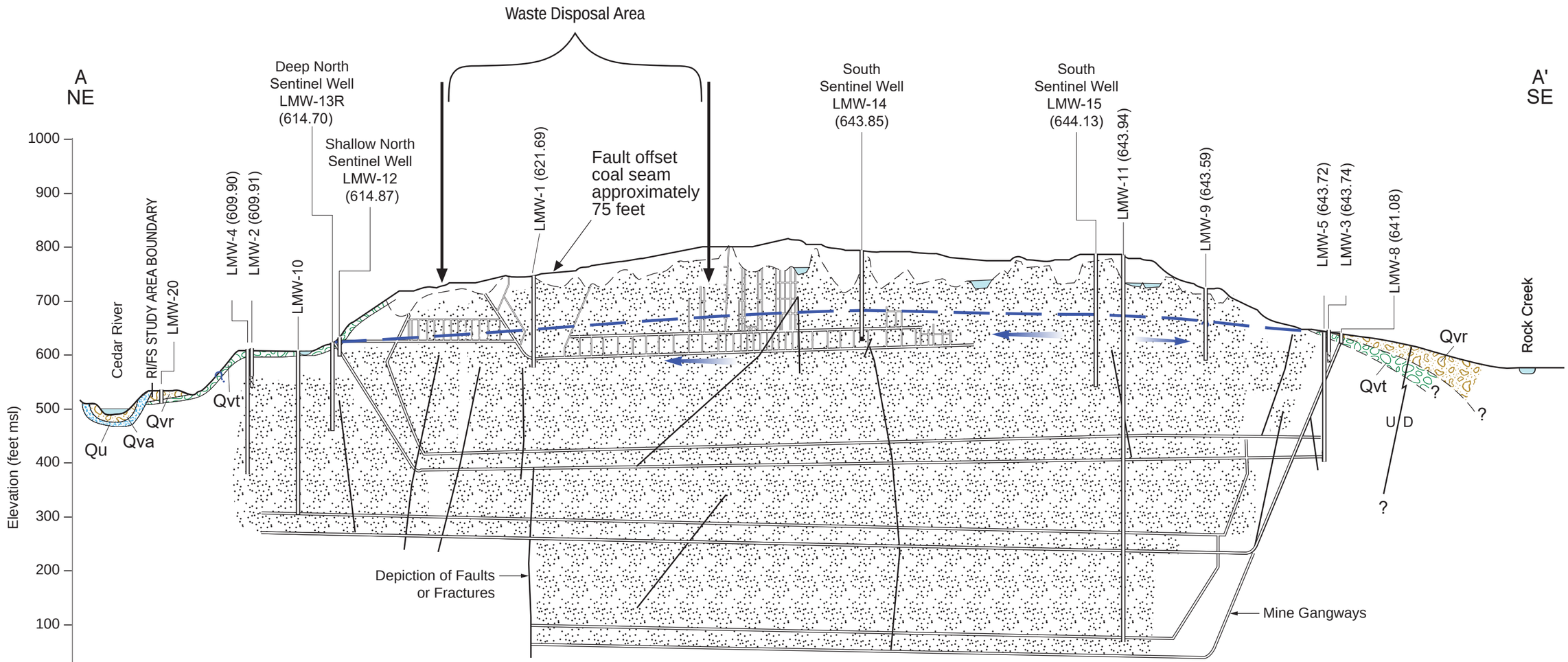
YYYY-MM-DD	2020-08-17
PREPARED	REDMOND
DESIGN	
REVIEW	
APPROVED	

PROJECT
LANDSBURG MINE SITE

TITLE
CROSS-SECTION ALONG STRIKE AT COAL SEAM SEPTEMBER 16, 2020
CROSS-SECTION A-A'

PROJECT No.	PHASE	FIGURE
923-1000-006	2020	2A

G:\PalmerCokingCoal\Col\LandsburgMineWA\99_PROJECTS\923100000002_Ph1_Remediation\R154102_PRODUCTION\INDD\923100_002_R154_003.indd



EXPLANATION

- Potentiometric surface
- Outline of trench bottom
- LMW-2 (609.99) Well ID (water level in ft. amsl)
- Qvt Till, compact mixture of gravel occasional boulders in clayey silty sand matrix
- Sandstone
- Surface water feature
- 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

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: Vertical to horizontal scale ratio is 2.5:1
Wells are project normal into the strike of the Cross-Section A-A' Groundwater elevation obtained 9/29/2020

CLIENT: LANDSBURG PLP GROUP
CONSULTANT: GOLDER
PROJECT: LANDSBURG MINE SITE
TITLE: CROSS-SECTION ALONG STRIKE AT COAL SEAM SEPTEMBER 29, 2020
CROSS-SECTION A-A'

YYYY-MM-DD	2020-08-17
PREPARED	REDMOND
DESIGN	
REVIEW	
APPROVED	

PROJECT No. 923-1000-006 | PHASE 2020 | FIGURE 2B

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APPENDIX A

Laboratory Analytical Reports Data Validation and Quality Assurance / Quality Control Review Memorandum and September 2020 Laboratory Analytical Report

TECHNICAL MEMORANDUM

DATE: November 20, 2020 **Project No.** 9231000006.2020

TO: Bill Kombol, Palmer Coking Coal Company

FROM: Joseph Xi (Golder Associates) **EMAIL** jxi@golder.com

LANDSBURG MINE SITE SEPTEMBER 2020 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 from September 16 to 18, 2020 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, one field blank, and one trip blank were collected by Golder Associates, Inc. (Golder). 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-846[1] Method 8260D, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
- 1,4-Dioxane following USEPA SW-846 Method 8270E, Semivolatile Organic Compounds by GC/MS
- Northwest Total Petroleum Hydrocarbons – Hydrocarbon Identification Scan by NWTPH-HCID

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.

Data validation was conducted in accordance with the criteria outlined in the National Functional Guidelines for Organic Review (USEPA 2017[2]), 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

[1] USEPA. 2015. 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

[2] USEPA. 2017. USEPA Contract Laboratory Program, National Functional Guidelines for Organic Superfund Methods Data Review. OLEM 9355.0-136. EPA-540-R-2017—001/002, January. Available on the Web at: https://www.epa.gov/clp/superfund-clp-national-functional-guidelines-data-review (accessed June 26, 2019)

18300 NE Union Hill Road, Suite 200, Redmond, Washington, USA 98052 T: +1 425 883-0777 F: +1 425 882-5498

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.

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.

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

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 for LMW-2-0920 and its duplicate LMW-2-0920D. 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 for LMW-2-0920 and its duplicate LMW-2-0920D were rejected. 2-chloroethyl vinyl ether was not detected during the September 2020 sampling round and has never been detected at the Site. Other minor data qualifiers related to sample preservation, MS/MSD recoveries below QC criteria, and matrix interference were also reported.

The laboratory analyzed analytes 2-chloroethyl vinyl ether, acrolein, and acrylonitrile from the preserved 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. 2-chloroethyl vinyl ether, acrolein, and acrylonitrile were not detected during the September 2020 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:

- QAPP stipulated matrix spike analysis was not performed along with the VOCs. No action is taken since adequate accuracy and precision data are provided.
- A data completeness of 99.8% was achieved, which exceeds the QAPP stipulated completeness goal of 90%.

Attachments

Attachment A: Tables
Table 1 – Sample Collection and Analysis Summary
Table 2 – Qualifier Summary Table

Attachment B: Level 2A Data Validation Checklist

ATTACHMENT A

Tables

Table 1: Sample Collection and Analysis Summary Landsburg Mine Water Sampling Investigation - September 2020

						Analyses/Parameters		
SDG	**Field Identification**	**Collection Date**	**Lab Identification**	**Matrix**	**QC Samples**	**VOCs (8260D)**	**1,4-Dioxane (8270E SIM)**	**DRO, GRO, MORO (TPH HCID)**
20I0225	LMW-10-0920	09/16/2020	20I0225-01	WG		x	x	x
	LMW-12-0920	09/16/2020	20I0225-02	WG		x	x	x
	LMW-13R-0920	09/16/2020	20I0225-03	WG		x	x	x
	LMW-2-0920	09/16/2020	20I0225-04	WG	MS/MSD	x	x	x
	LMW-2-0920D	09/16/2020	20I0225-05	WG	FD (LMW-2-0920)	x	x	x
	LMW-FB-0920	09/16/2020	20I0225-06	WQ	FB	x	x	x
	LMW-4-0920	09/16/2020	20I0225-07	WG		x	x	x
20I0266	LMW-6-0920	9/19/2020	20I0266-01	WG		x		x
	LMW-11-0920	9/19/2020	20I0266-02	WG		x		x
	LMW-15-0920	9/19/2020	20I0266-03	WG		x		x
	LMW-14-0920	9/19/2020	20I0266-04	WG		x		x
	LMW-7-0920	9/19/2020	20I0266-05	WG		x		x
	LMW-9-0920	9/19/2020	20I0266-06	WG		x		x
	LMW-3-0920	9/18/2020	20I0266-07	WG		x		x
	LMW-5-0920	9/18/2020	20I0266-08	WG		x		x
	LMW-8-0920	9/18/2020	20I0266-09	WG		x		x
	Trip Blank	9/18/2020	20I0266-10	WQ	TB	x		

Notes:

All analyses performed by Analytical Resources, Incorporated (ARI), Tukwila WA.

Abbreviations:

FB - Field Blank
FD - Field Duplicate
QC - Quality Control
SDG - Sample Delivery Group
GW - Groundwater
TB - Trip Blank
WQ - Water Quality
MS/MSD - Matrix Spike/Matrix Spike Duplicate
SIM - Selected Ion Monitoring
VOCs - Volatile Organic Compounds

Table 2: Qualifier Summary Table Landsburg Mine Water Sampling Investigation - September 2020

SDG	Sample Name	Constituent	New Result	New MDL	New RL	Qualifier	Reason
20I0266	All Samples	Acrolein	--	--	--	UJ	Sample Preservation
20I0266	All Samples	Acrylonitrile	--	--	--	UJ	Sample Preservation
20I0266	All Samples	2-Chloroethyl vinyl ether	--	--	--	UJ	Sample Preservation
20I0225	All Samples	Acrolein	--	--	--	UJ	Sample Preservation
20I0225	All Samples	Acrylonitrile	--	--	--	UJ	Sample Preservation
20I0225	All Samples except LMW-2-0920 and LMW-2-0920D	2-Chloroethyl vinyl ether	--	--	--	UJ	Sample Preservation
20I0225	LMW-2-0920	2-Chloroethyl vinyl ether	--	--	--	R	MS/MSD recovery not calculated.
20I0225	LMW-2-0920D	2-Chloroethyl vinyl ether	--	--	--	R	MS/MSD recovery not calculated.
--	All Samples	All Results	--	--	--	--	Laboratory applied U-qualifiers or J-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
QC - Quality Control
RL - Reporting Limit
SDG - Sample Delivery Group

Qualifier Definitions

R - Rejected Result
UJ - Non-Detect Result, RL is estimated

ATTACHMENT B

Level 2A Data Validation Checklist

Project Name: Landsburg Groundwater
Project Number/Phase/Task: 9231000006 p2020
Reviewing Company: Golder Associates
Project Manager: Gary Zimmerman
Data Evaluator: Rachel Brasco
Data Evaluation Date: November 2, 2020
Checked by: Michael Shadle
Review Date: November 6, 2020
Laboratory: Analytical Resources, Inc., Tukwila, WA
Lab SDG #: 20I0225 / 20I0266

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-2017-002, January 2017.

COC and Sample Receipt	YES	NO	NA	COMMENT
a) COC complete and correct?	☐	☒		TAT not listed and no date listed for trip blank for COC relinquished 9/18/2020
b) COC documents release of custody (signed and dated)?	☒	☐		
c) Field QC types provided (note types)?	☒	☐	☐	FD, MS/MSD, TB, and FB; See Table 1
d) Did the cooler contents match the COC?	☐	☒		See Note 1
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?	☒	☐		
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?	☒	☐		All Information for a 2A Scope

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?	☒	☐		No Results Less than QL
e) Were detected concentrations above the calibration range reported by the laboratory?	☒	☐		Only for QC samples, all primary are within calibration range

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?	☒	☐	☐	See Notes Below
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 2
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 Note 3
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-2-0920
b) Were proper analytes reported in the MS/MSD?	☒	☐	☐	
c) Were project-specific MS/MSD recoveries within control limits?	☐	☒	☐	See Note 4
d) If not, were sample concentrations greater than 4x the spiking concentration?	☐	☒	☐	

MS/MSDs	YES	NO	NA	COMMENTS
e) Was the RPD or absolute difference within control limits (if project-specific MSD analyzed)?	☒	☐	☐	
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?	☐	☒	☐	
b) Was laboratory duplicate RPD or absolute difference criteria acceptable?	☐	☐	☒	
c) Were field duplicates reported?	☒	☐	☐	LMW-2-0920/ LMW-2-0920D
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?	☒	☐		See Note 5
b) Were data acceptable and usable, except where noted?	☒	☐		

Comments/Notes:

1. The Cooler Receipt Form noted the number of containers listed on the COC does not match with the number of containers received for samples collected 9/16/20. All samples were correctly analyzed. No further action required other than to note.

2. All VOCs were preserved in accordance with the method requirements to pH less than 2 with HCl, and the laboratory analyzed analytes 2-chloroethyl vinyl ether, acrolein and acrylonitrile from the preserved VOA vials. Due to the acid-labile nature of analytes 2-chloroethyl vinyl ether, acrolein and acrylonitrile, it is recommended those analytes are collected in and analyzed from unpreserved vials. Based on professional judgment, when samples were outside of method and preservation requirements 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.

3. LCS/LCSD recoveries were above of acceptance criteria for associated primary and field duplicate samples, as shown in the table below. The VOC Guidelines do not indicate actions required for LCS recoveries outside of QC criteria. Using professional judgment, when LCS/LCSD recovery was above QC criteria, associated non-detect results did not require qualification.

LCS/LCSD ID	Method	Analyte	LCS / LCSD Recovery (%)	RPD (%)	% Recovery / RPD Criteria
BII0496-BS1 BII0496-BSD1	8260D	Acrolein	**169 / 212**	22.50	52 – 144 / 30
BII0580-BS1 BII0580-BSD1	8260D	Acrolein	**164 / 195**	17.50	52 – 144 / 30

4. MS/MSD recoveries were outside of acceptance criteria for select analytes, as summarized in the table below for project specific samples. Using professional judgment, when the MS/MSD recovery was above QC criteria, associated non-detect results did not require qualification. Using professional judgment, when the sample used for the MS/MSD was also used for the field duplicate, both the primary sample LMW-2-0620 and field duplicate LMW-2-0620D were qualified for any MS/MSD deficiencies.

   The MS/MSD results for 2-chloroethyl vinyl 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 ND and the calculated percent recovery of the associated MS/MSD did not recover (NR), the associated non-detect results were rejected (R).

Primary Sample Name	Parameter	Analyte	MS/MSD % Recovery	RPD	% Recovery / RPD Criteria
LMW-2-0920	8260D	Acrolein	**160 / 165**	2.93	52 – 144 / 30
LMW-2-0920	8260D	2-Chloroethyl vinyl ether	NR / NR	NC	74 – 127 / --

5. The laboratory case narrative noted that certain CCVs and ICVs were outside of control criteria for select analytes in the VOC analysis and marked with the “Q” qualifier. Review of calibration data is outside of the scope of a Level IIA validation, and the calibration results were not included in the data package. There is no other action but to note.

Data qualification: See Table 2.

Definitions:

%D:	Percent Difference / Drift
%R:	Percent Recovery
CCB:	Continuing Calibration Blank
CCV:	Continuing Calibration Verification
COC:	Chain of Custody
CRQL:	Contract Required Quantitation Limit
DMC:	Deuterated Monitoring Compound
DRO:	Diesel Range Organics
EB:	Equipment Blank
FB:	Field Blank
GRO:	Gasoline Range Organics
HT:	Holding Time
ICB:	Initial Calibration Blank
ICV:	Initial Calibration Verification
IS:	Internal Standard
LCS:	Laboratory Control Sample
LCSD:	Laboratory Control Sample Duplicate
MB:	Method Blank
MDL:	Method Detection Limit
MS:	Matrix Spike
MSD:	Matrix Spike Duplicate
PCB:	Polychlorinated Biphenyl
PQL:	Practical Quantitation Limit
QAPP:	Quality Assurance Project Plan
QC:	Quality Control
QL:	Quantitation Limit
RB:	Rinsate Blank
RDL:	Reported Detection Limit
RL:	Reporting Limit
RPD:	Relative Percent Deviation
RRF:	Relative Response Factor
RSD:	Relative Standard Deviation
SD:	Serial Dilution
SDG:	Sample Delivery Group
SPLP:	Synthetic Precipitate Leachate Procedure
SVOC:	Semivolatile Organic Compound
TAL:	Target Analyte List
TAT:	Turn Around Time
TB:	Trip Blank
TCL:	Target Compound List
TCLP:	Toxicity Characteristic Leachate Procedure
TDS:	Total Dissolved Solids
TOC:	Total Organic Carbon
TPH:	Total Petroleum Hydrocarbons
TSS:	Total Suspended Solids
VOC:	Volatile Organic Compound
ZHE:	Zero Headspace Extraction

Analytical Resources, Incorporated
Analytical Chemists and Consultants

02 October 2020

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

RE: Landsburg

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)
20I0225	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, Inc.

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

PJLA Testing
Accreditation # 66169

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 20I0225	Turn-around Requested: Standard	Page: 1 of 1	
ARI Client Company: Golder	Phone:	Date: 9/17/20	Ice Present? Yes
Client Contact: Gary Zimmerman / Joseph Xi		No. of Coolers: 3	Cooler Temps: See CRF
Client Project Name: Landsburg GW			
Client Project #: 923100000620 20	Samplers: Tom Haskins / Turner Doggett		

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

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: VOCs (Client list)	TPH HCID (Hold Pollogy)	1,4-Dioxane 8270D						Notes/Comments
LMW-10-0920	9/16/20	1119	GW	11	X	X	X						
LMW-12-0920	9/16/20	1245	GW	11	X	X	X						
LMW-13R-0920	9/16/20	1343	GW	11	X	X	X						
LMW-2-0920	9/16/20	1458	GW	33	X	X	X						+MS/MSD
LMW-2-0920-D	9/16/20	1503	GW	11	X	X	X						
LMW-FB-0920	9/16/20	1530	DI	11	X	X	X						
LMW-4-0920	9/16/20	1635	GW	11	X	X	X						

Comments/Special Instructions: Biology EIM EDD; Client specific RLs/ analyte list	Relinquished by: (Signature) Turner Doggett	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Turner Doggett	Printed Name: Jacob Hecht	Printed Name:	Printed Name:
	Company: Golder	Company: ARI	Company:	Company:
	Date & Time: 9/17/20 0955	Date & Time: 09/17/2020 0955	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: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LMW-10-0920	20I0225-01	Water	16-Sep-2020 11:19	17-Sep-2020 09:55
LMW-12-0920	20I0225-02	Water	16-Sep-2020 12:45	17-Sep-2020 09:55
LMW-13R-0920	20I0225-03	Water	16-Sep-2020 13:43	17-Sep-2020 09:55
LMW-2-0920	20I0225-04	Water	16-Sep-2020 14:58	17-Sep-2020 09:55
LMW-2-0920D	20I0225-05	Water	16-Sep-2020 15:03	17-Sep-2020 09:55
LMW-FB-0920	20I0225-06	Water	16-Sep-2020 15:30	17-Sep-2020 09:55
LMW-4-0920	20I0225-07	Water	16-Sep-2020 16:35	17-Sep-2020 09:55

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

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 low in the CCAL and acrolein is out of control high. 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.

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

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

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

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, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Golder

Project Name: Landsburg Gw

COC No(s): NA

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

Assigned ARI Job No: 20I0225

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 0955 0.4 0.8 1.2 ___ ___ ___

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

Temp Gun ID#: DOO 5206

Cooler Accepted by: JGL Date: 09/17/2020 Time: 0955

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 JGL
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?		SLF 9/18/2020 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: [signature] / Kelly Bottem Date: 9/18/2020 Time: 1007 Labels checked by: SLF

***** 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:

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-10-0920

20I0225-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 11:19

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 18:29

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0225-01 I

Preparation Batch: BII0496 — Sample Size: 10 mL

Prepared: 09/18/2020 — 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	2.50	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	0.50	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	0.10	0.14	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	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-10-0920

20I0225-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 11:19

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 18:29

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*83.0*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-10-0920

20I0225-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 11:19

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 18:29

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*97.1*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*102*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*108*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-10-0920

20I0225-01 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 09/16/2020 11:19

Instrument: NT6 Analyst: JZ — Analyzed: 09/26/2020 13:41

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 20I0225-01 A 01

Preparation Batch: BII0598 — Sample Size: 500 mL

Prepared: 09/22/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	ND	ug/L	U
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*63.6*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-10-0920

20I0225-01 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/16/2020 11:19

Instrument: FID4 Analyst: CTO — Analyzed: 10/01/2020 18:22

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20I0225-01 B 01

Preparation Batch: BII0600 — Sample Size: 500 mL

Prepared: 09/22/2020 — 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 %*	*90.4*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*87.9*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-12-0920

20I0225-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 12:45

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 18:55

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0225-02 G

Preparation Batch: BII0496 — Sample Size: 10 mL

Prepared: 09/18/2020 — 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	2.50	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	0.50	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	0.10	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	0.24	ug/L	
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-12-0920

20I0225-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 12:45

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 18:55

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*92.6*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-12-0920

20I0225-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 12:45

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 18:55

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*97.5*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*100*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*101*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-12-0920

20I0225-02 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 09/16/2020 12:45

Instrument: NT6 Analyst: JZ — Analyzed: 09/26/2020 14:05

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 20I0225-02 A 01

Preparation Batch: BII0598 — Sample Size: 500 mL

Prepared: 09/22/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	0.6	ug/L	
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*62.3*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-12-0920

20I0225-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/16/2020 12:45

Instrument: FID4 Analyst: CTO — Analyzed: 10/01/2020 18:43

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20I0225-02 B 01

Preparation Batch: BII0600 — Sample Size: 500 mL

Prepared: 09/22/2020 — 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 %*	*96.7*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*95.4*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-13R-0920

20I0225-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 13:43

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 19:21

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0225-03 G

Preparation Batch: BII0496 — Sample Size: 10 mL

Prepared: 09/18/2020 — 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	2.50	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	0.50	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	0.10	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	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-13R-0920

20I0225-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 13:43

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 19:21

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*89.1*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-13R-0920

20I0225-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 13:43

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 19:21

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*100*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*98.8*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-13R-0920

20I0225-03 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 09/16/2020 13:43
Instrument: NT6 Analyst: JZ — Analyzed: 09/26/2020 14:30

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 20I0225-03 A 01
Preparation Batch: BII0598 — Sample Size: 500 mL
Prepared: 09/22/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	ND	ug/L	U
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*53.3*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-13R-0920

20I0225-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/16/2020 13:43

Instrument: FID4 Analyst: CTO — Analyzed: 10/01/2020 19:03

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20I0225-03 B 01

Preparation Batch: BII0600 — Sample Size: 500 mL

Prepared: 09/22/2020 — 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 %*	*96.4*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*95.5*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-2-0920

20I0225-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 14:58

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 19:46

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0225-04 AA

Preparation Batch: BII0496 — Sample Size: 10 mL

Prepared: 09/18/2020 — 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	2.50	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	0.50	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	0.10	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	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-2-0920

20I0225-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 14:58

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 19:46

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*85.5*	*%*	

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-2-0920

20I0225-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 14:58

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 19:46

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*99.5*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*104*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*101*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-2-0920

20I0225-04 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 09/16/2020 14:58
Instrument: NT6 Analyst: JZ — Analyzed: 09/26/2020 14:55

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 20I0225-04 A 01
Preparation Batch: BII0598 — Sample Size: 500 mL
Prepared: 09/22/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	1.6	ug/L	
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*60.6*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-2-0920

20I0225-04 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/16/2020 14:58
Instrument: FID4 Analyst: CTO — Analyzed: 10/01/2020 19:24

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20I0225-04 D 01
Preparation Batch: BII0600 — Sample Size: 500 mL
Prepared: 09/22/2020 — 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 %*	*97.2*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*97.8*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-2-0920D

20I0225-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 15:03

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 20:12

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0225-05 H

Preparation Batch: BII0496 — Sample Size: 10 mL

Prepared: 09/18/2020 — 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	2.50	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	0.50	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	0.10	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	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-2-0920D

20I0225-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 15:03

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 20:12

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*82.1*	*%*	

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-2-0920D

20I0225-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 15:03

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 20:12

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*97.5*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*104*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*97.9*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-2-0920D

20I0225-05 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 09/16/2020 15:03

Instrument: NT6 Analyst: JZ — Analyzed: 09/26/2020 16:09

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 20I0225-05 A 01

Preparation Batch: BII0598 — Sample Size: 500 mL

Prepared: 09/22/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	1.7	ug/L	
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*63.6*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-2-0920D

20I0225-05 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/16/2020 15:03

Instrument: FID4 Analyst: CTO — Analyzed: 10/01/2020 20:25

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20I0225-05 B 01

Preparation Batch: BII0600 — Sample Size: 500 mL

Prepared: 09/22/2020 — 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 %*	*94.0*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*95.2*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-FB-0920

20I0225-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 15:30

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 20:38

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0225-06 G

Preparation Batch: BII0496 — Sample Size: 10 mL

Prepared: 09/18/2020 — 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	2.50	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	0.50	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	0.10	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	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-FB-0920

20I0225-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 15:30

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 20:38

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*90.1*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-FB-0920

20I0225-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 15:30

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 20:38

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*99.2*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*101*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*101*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-FB-0920

20I0225-06 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 09/16/2020 15:30

Instrument: NT6 Analyst: JZ — Analyzed: 09/26/2020 16:34

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 20I0225-06 A 01

Preparation Batch: BII0598 — Sample Size: 500 mL

Prepared: 09/22/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	ND	ug/L	U
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*68.5*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-FB-0920

20I0225-06 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/16/2020 15:30

Instrument: FID4 Analyst: CTO — Analyzed: 10/01/2020 20:46

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20I0225-06 B 01

Preparation Batch: BII0600 — Sample Size: 500 mL

Prepared: 09/22/2020 — 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 %*	*98.9*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*97.2*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-4-0920

20I0225-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 16:35

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 21:04

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0225-07 G

Preparation Batch: BII0496 — Sample Size: 10 mL

Prepared: 09/18/2020 — 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	2.50	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	0.50	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	0.10	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	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-4-0920

20I0225-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 16:35
Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 21:04

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*81.2*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-4-0920

20I0225-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/16/2020 16:35

Instrument: NT3 Analyst: PKC — Analyzed: 09/18/2020 21:04

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*101*	*%*	
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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-4-0920

20I0225-07 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 09/16/2020 16:35
Instrument: NT6 Analyst: JZ — Analyzed: 09/26/2020 16:59

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 20I0225-07 A 01
Preparation Batch: BII0598 — Sample Size: 500 mL
Prepared: 09/22/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	1.8	ug/L	
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*63.0*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

LMW-4-0920

20I0225-07 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/16/2020 16:35
Instrument: FID4 Analyst: CTO — Analyzed: 10/01/2020 21:06

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20I0225-07 B 01
Preparation Batch: BII0600 — Sample Size: 500 mL
Prepared: 09/22/2020 — 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 %*	*103*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*102*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0496-BLK1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 12:21						
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	2.50	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	0.50	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.10	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	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0496-BLK1)			Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 12:21							
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	0.10	ug/L							U
1,2,3-Trichloropropane	ND	0.20	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	0.20	ug/L							U
Naphthalene	ND	0.50	ug/L							U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0496-BLK1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 12:21						
1,2,3-Trichlorobenzene	ND	0.20	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.22		ug/L	*5.00*		*104*	*80-129*			
Surrogate: Toluene-d8	4.92		ug/L	*5.00*		*98.4*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.17		ug/L	*5.00*		*103*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.96		ug/L	*5.00*		*99.2*	*80-120*			
LCS (BII0496-BS1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 10:11						
Chloromethane	6.54	0.50	ug/L	10.0		65.4	60-138			Q
Vinyl Chloride	9.37	0.10	ug/L	10.0		93.7	66-133			
Bromomethane	9.29	1.00	ug/L	10.0		92.9	72-131			
Chloroethane	9.49	0.20	ug/L	10.0		94.9	60-155			
Trichlorofluoromethane	8.70	0.20	ug/L	10.0		87.0	80-129			
Acrolein	84.6	2.50	ug/L	50.0		169	52-144			*, Q
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.93	0.20	ug/L	10.0		99.3	76-129			
Acetone	44.3	5.00	ug/L	50.0		88.7	58-142			
1,1-Dichloroethene	9.42	0.20	ug/L	10.0		94.2	69-135			
Iodomethane	9.49	0.50	ug/L	10.0		94.9	56-147			
Methylene Chloride	8.86	1.00	ug/L	10.0		88.6	65-135			
Acrylonitrile	8.43	1.00	ug/L	10.0		84.3	64-134			
Carbon Disulfide	8.86	0.10	ug/L	10.0		88.6	78-125			
trans-1,2-Dichloroethene	9.30	0.20	ug/L	10.0		93.0	78-128			
Vinyl Acetate	8.94	0.20	ug/L	10.0		89.4	55-138			
1,1-Dichloroethane	9.50	0.20	ug/L	10.0		95.0	76-124			
2-Butanone	43.6	5.00	ug/L	50.0		87.2	61-140			
2,2-Dichloropropane	10.6	0.10	ug/L	10.0		106	78-125			
cis-1,2-Dichloroethene	9.74	0.20	ug/L	10.0		97.4	80-121			
Chloroform	8.83	0.20	ug/L	10.0		88.3	80-122			
Bromochloromethane	9.08	0.20	ug/L	10.0		90.8	80-121			
1,1,1-Trichloroethane	9.75	0.20	ug/L	10.0		97.5	79-123			
1,1-Dichloropropene	8.93	0.10	ug/L	10.0		89.3	80-120			
Carbon tetrachloride	10.1	0.20	ug/L	10.0		101	53-137			
1,2-Dichloroethane	8.69	0.20	ug/L	10.0		86.9	75-123			
Benzene	9.58	0.20	ug/L	10.0		95.8	80-120			
Trichloroethene	9.35	0.20	ug/L	10.0		93.5	80-120			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BII0496-BS1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 10:11						
1,2-Dichloropropane	9.41	0.20	ug/L	10.0		94.1	80-120			
Bromodichloromethane	9.66	0.20	ug/L	10.0		96.6	80-121			
Dibromomethane	9.10	0.20	ug/L	10.0		91.0	80-120			
2-Chloroethyl vinyl ether	8.63	0.50	ug/L	10.0		86.3	74-127			
4-Methyl-2-Pentanone	43.3	2.50	ug/L	50.0		86.7	67-133			
cis-1,3-Dichloropropene	9.86	0.20	ug/L	10.0		98.6	80-124			
Toluene	9.32	0.20	ug/L	10.0		93.2	80-120			
trans-1,3-Dichloropropene	9.34	0.20	ug/L	10.0		93.4	71-127			
2-Hexanone	43.5	5.00	ug/L	50.0		87.0	69-133			
1,1,2-Trichloroethane	9.42	0.20	ug/L	10.0		94.2	80-121			
1,3-Dichloropropane	8.66	0.10	ug/L	10.0		86.6	80-120			
Tetrachloroethene	9.61	0.20	ug/L	10.0		96.1	80-120			
Dibromochloromethane	8.79	0.20	ug/L	10.0		87.9	65-135			
1,2-Dibromoethane	9.15	0.10	ug/L	10.0		91.5	80-121			
Chlorobenzene	9.41	0.20	ug/L	10.0		94.1	80-120			
Ethylbenzene	9.56	0.20	ug/L	10.0		95.6	80-120			
1,1,1,2-Tetrachloroethane	9.60	0.20	ug/L	10.0		96.0	80-120			
m,p-Xylene	19.8	0.40	ug/L	20.0		99.0	80-121			
o-Xylene	9.74	0.20	ug/L	10.0		97.4	80-121			
Xylenes, total	29.5	0.60	ug/L	30.0		98.4	76-127			
Styrene	9.65	0.20	ug/L	10.0		96.5	80-124			
Bromoform	9.37	0.20	ug/L	10.0		93.7	51-134			
1,1,2,2-Tetrachloroethane	8.98	0.10	ug/L	10.0		89.8	77-123			
1,2,3-Trichloropropane	8.88	0.20	ug/L	10.0		88.8	76-125			
trans-1,4-Dichloro 2-Butene	8.35	1.00	ug/L	10.0		83.5	55-129			
n-Propylbenzene	9.42	0.20	ug/L	10.0		94.2	78-130			
Bromobenzene	9.11	0.20	ug/L	10.0		91.1	80-120			
Isopropyl Benzene	9.47	0.20	ug/L	10.0		94.7	80-128			
2-Chlorotoluene	8.99	0.10	ug/L	10.0		89.9	78-122			
4-Chlorotoluene	9.20	0.20	ug/L	10.0		92.0	80-121			
t-Butylbenzene	9.17	0.20	ug/L	10.0		91.7	78-125			
1,3,5-Trimethylbenzene	9.50	0.20	ug/L	10.0		95.0	80-129			
1,2,4-Trimethylbenzene	9.59	0.20	ug/L	10.0		95.9	80-127			
s-Butylbenzene	9.38	0.20	ug/L	10.0		93.8	78-129			
4-Isopropyl Toluene	9.50	0.20	ug/L	10.0		95.0	79-130			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BII0496-BS1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 10:11						
1,3-Dichlorobenzene	9.31	0.20	ug/L	10.0		93.1	80-120			
1,4-Dichlorobenzene	9.16	0.20	ug/L	10.0		91.6	80-120			
n-Butylbenzene	9.80	0.20	ug/L	10.0		98.0	74-129			
1,2-Dichlorobenzene	9.09	0.20	ug/L	10.0		90.9	80-120			
1,2-Dibromo-3-chloropropane	9.21	0.50	ug/L	10.0		92.1	62-123			
1,2,4-Trichlorobenzene	10.0	0.50	ug/L	10.0		100	64-124			
Hexachloro-1,3-Butadiene	10.0	0.20	ug/L	10.0		100	58-123			
Naphthalene	10.0	0.50	ug/L	10.0		100	50-134			
1,2,3-Trichlorobenzene	9.47	0.20	ug/L	10.0		94.7	49-133			
Dichlorodifluoromethane	9.00	0.20	ug/L	10.0		90.0	48-147			
Surrogate: 1,2-Dichloroethane-d4	4.95		ug/L	*5.00*		*99.0*	*80-129*			
Surrogate: Toluene-d8	5.06		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.87		ug/L	*5.00*		*97.4*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.96		ug/L	*5.00*		*99.2*	*80-120*			
LCS Dup (BII0496-BSD1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 10:37						
Chloromethane	7.47	0.50	ug/L	10.0		74.7	60-138	13.30	30	Q
Vinyl Chloride	11.4	0.10	ug/L	10.0		114	66-133	19.40	30	
Bromomethane	10.6	1.00	ug/L	10.0		106	72-131	13.00	30	
Chloroethane	11.1	0.20	ug/L	10.0		111	60-155	15.70	30	
Trichlorofluoromethane	9.41	0.20	ug/L	10.0		94.1	80-129	7.78	30	
Acrolein	106	2.50	ug/L	50.0		212	52-144	22.50	30	*, Q, E
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.1	0.20	ug/L	10.0		111	76-129	10.80	30	
Acetone	55.4	5.00	ug/L	50.0		111	58-142	22.20	30	
1,1-Dichloroethene	11.0	0.20	ug/L	10.0		110	69-135	15.40	30	
Iodomethane	11.4	0.50	ug/L	10.0		114	56-147	18.60	30	
Methylene Chloride	10.4	1.00	ug/L	10.0		104	65-135	16.20	30	
Acrylonitrile	11.3	1.00	ug/L	10.0		113	64-134	28.80	30	
Carbon Disulfide	10.9	0.10	ug/L	10.0		109	78-125	20.20	30	
trans-1,2-Dichloroethene	10.9	0.20	ug/L	10.0		109	78-128	15.50	30	
Vinyl Acetate	11.2	0.20	ug/L	10.0		112	55-138	22.70	30	
1,1-Dichloroethane	11.5	0.20	ug/L	10.0		115	76-124	18.80	30	
2-Butanone	54.3	5.00	ug/L	50.0		109	61-140	21.90	30	
2,2-Dichloropropane	12.5	0.10	ug/L	10.0		125	78-125	16.20	30	
cis-1,2-Dichloroethene	11.3	0.20	ug/L	10.0		113	80-121	14.80	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BII0496-BSD1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 10:37						
Chloroform	11.0	0.20	ug/L	10.0		110	80-122	21.60	30	
Bromochloromethane	11.3	0.20	ug/L	10.0		113	80-121	21.80	30	
1,1,1-Trichloroethane	11.4	0.20	ug/L	10.0		114	79-123	15.30	30	
1,1-Dichloropropene	10.3	0.10	ug/L	10.0		103	80-120	14.40	30	
Carbon tetrachloride	11.9	0.20	ug/L	10.0		119	53-137	16.70	30	
1,2-Dichloroethane	10.6	0.20	ug/L	10.0		106	75-123	20.10	30	
Benzene	11.0	0.20	ug/L	10.0		110	80-120	13.50	30	
Trichloroethene	11.4	0.20	ug/L	10.0		114	80-120	20.00	30	
1,2-Dichloropropane	11.6	0.20	ug/L	10.0		116	80-120	20.70	30	
Bromodichloromethane	11.2	0.20	ug/L	10.0		112	80-121	14.90	30	
Dibromomethane	11.2	0.20	ug/L	10.0		112	80-120	20.60	30	
2-Chloroethyl vinyl ether	10.3	0.50	ug/L	10.0		103	74-127	17.90	30	
4-Methyl-2-Pentanone	55.9	2.50	ug/L	50.0		112	67-133	25.30	30	
cis-1,3-Dichloropropene	11.8	0.20	ug/L	10.0		118	80-124	18.30	30	
Toluene	11.3	0.20	ug/L	10.0		113	80-120	19.20	30	
trans-1,3-Dichloropropene	11.7	0.20	ug/L	10.0		117	71-127	22.10	30	
2-Hexanone	56.7	5.00	ug/L	50.0		113	69-133	26.40	30	
1,1,2-Trichloroethane	11.8	0.20	ug/L	10.0		118	80-121	22.40	30	
1,3-Dichloropropane	10.5	0.10	ug/L	10.0		105	80-120	18.90	30	
Tetrachloroethene	11.9	0.20	ug/L	10.0		119	80-120	20.90	30	
Dibromochloromethane	11.2	0.20	ug/L	10.0		112	65-135	24.30	30	
1,2-Dibromoethane	11.2	0.10	ug/L	10.0		112	80-121	20.10	30	
Chlorobenzene	11.1	0.20	ug/L	10.0		111	80-120	16.50	30	
Ethylbenzene	11.5	0.20	ug/L	10.0		115	80-120	18.40	30	
1,1,1,2-Tetrachloroethane	11.7	0.20	ug/L	10.0		117	80-120	19.50	30	
m,p-Xylene	22.8	0.40	ug/L	20.0		114	80-121	14.00	30	
o-Xylene	11.0	0.20	ug/L	10.0		110	80-121	11.80	30	
Xylenes, total	33.7	0.60	ug/L	30.0		112	76-127	13.20	30	
Styrene	11.4	0.20	ug/L	10.0		114	80-124	16.50	30	
Bromoform	12.3	0.20	ug/L	10.0		123	51-134	27.30	30	
1,1,2,2-Tetrachloroethane	11.7	0.10	ug/L	10.0		117	77-123	26.60	30	
1,2,3-Trichloropropane	11.0	0.20	ug/L	10.0		110	76-125	21.50	30	
trans-1,4-Dichloro 2-Butene	11.1	1.00	ug/L	10.0		111	55-129	27.90	30	
n-Propylbenzene	11.4	0.20	ug/L	10.0		114	78-130	18.70	30	
Bromobenzene	11.1	0.20	ug/L	10.0		111	80-120	19.60	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BII0496-BSD1)				Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 10:37						
Isopropyl Benzene	11.2	0.20	ug/L	10.0		112	80-128	17.10	30	
2-Chlorotoluene	11.1	0.10	ug/L	10.0		111	78-122	20.70	30	
4-Chlorotoluene	10.9	0.20	ug/L	10.0		109	80-121	16.50	30	
t-Butylbenzene	11.2	0.20	ug/L	10.0		112	78-125	19.50	30	
1,3,5-Trimethylbenzene	11.4	0.20	ug/L	10.0		114	80-129	18.10	30	
1,2,4-Trimethylbenzene	11.4	0.20	ug/L	10.0		114	80-127	17.20	30	
s-Butylbenzene	11.7	0.20	ug/L	10.0		117	78-129	21.90	30	
4-Isopropyl Toluene	11.5	0.20	ug/L	10.0		115	79-130	18.70	30	
1,3-Dichlorobenzene	11.3	0.20	ug/L	10.0		113	80-120	19.60	30	
1,4-Dichlorobenzene	10.8	0.20	ug/L	10.0		108	80-120	16.50	30	
n-Butylbenzene	11.4	0.20	ug/L	10.0		114	74-129	15.10	30	
1,2-Dichlorobenzene	11.2	0.20	ug/L	10.0		112	80-120	20.60	30	
1,2-Dibromo-3-chloropropane	11.1	0.50	ug/L	10.0		111	62-123	18.50	30	
1,2,4-Trichlorobenzene	12.2	0.50	ug/L	10.0		122	64-124	19.60	30	
Hexachloro-1,3-Butadiene	12.0	0.20	ug/L	10.0		120	58-123	17.90	30	
Naphthalene	12.9	0.50	ug/L	10.0		129	50-134	25.70	30	
1,2,3-Trichlorobenzene	12.1	0.20	ug/L	10.0		121	49-133	24.10	30	
Dichlorodifluoromethane	9.60	0.20	ug/L	10.0		96.0	48-147	6.35	30	
Surrogate: 1,2-Dichloroethane-d4	4.76		ug/L	*5.00*		*95.2*	*80-129*			
Surrogate: Toluene-d8	4.91		ug/L	*5.00*		*98.1*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.81		ug/L	*5.00*		*96.2*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.86		ug/L	*5.00*		*97.3*	*80-120*			
Matrix Spike (BII0496-MS1)	**Source: 20I0225-04**			Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 21:30						
Chloromethane	8.43	0.50	ug/L	10.0	ND	84.3	60-138			Q
Vinyl Chloride	8.25	0.10	ug/L	10.0	ND	82.5	66-133			
Bromomethane	10.5	1.00	ug/L	10.0	ND	105	72-131			
Chloroethane	13.2	0.20	ug/L	10.0	ND	132	60-155			
Trichlorofluoromethane	10.9	0.20	ug/L	10.0	ND	109	80-129			
Acrolein	80.1	2.50	ug/L	50.0	ND	160	52-144			*, Q
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.3	0.20	ug/L	10.0	ND	103	76-129			
Acetone	50.3	5.00	ug/L	50.0	ND	96.5	58-142			
1,1-Dichloroethene	9.95	0.20	ug/L	10.0	ND	99.5	69-135			
Iodomethane	10.8	0.50	ug/L	10.0	ND	108	56-147			
Methylene Chloride	9.94	1.00	ug/L	10.0	ND	99.4	65-135			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BII0496-MS1)	**Source: 20I0225-04**		Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 21:30							
Acrylonitrile	10.1	1.00	ug/L	10.0	ND	101	64-134			
Carbon Disulfide	9.82	0.10	ug/L	10.0	ND	97.7	78-125			
trans-1,2-Dichloroethene	9.88	0.20	ug/L	10.0	ND	98.8	78-128			
Vinyl Acetate	8.00	0.20	ug/L	10.0	ND	80.0	55-138			
1,1-Dichloroethane	10.1	0.20	ug/L	10.0	ND	101	76-124			
2-Butanone	50.0	5.00	ug/L	50.0	ND	100	61-140			
2,2-Dichloropropane	9.09	0.10	ug/L	10.0	ND	90.9	78-125			
cis-1,2-Dichloroethene	10.6	0.20	ug/L	10.0	ND	106	80-121			
Chloroform	9.43	0.20	ug/L	10.0	ND	94.3	80-122			
Bromochloromethane	10.7	0.20	ug/L	10.0	ND	107	80-121			
1,1,1-Trichloroethane	10.0	0.20	ug/L	10.0	ND	100	79-123			
1,1-Dichloropropene	9.52	0.10	ug/L	10.0	ND	95.2	80-120			
Carbon tetrachloride	10.4	0.20	ug/L	10.0	ND	104	53-137			
1,2-Dichloroethane	9.29	0.20	ug/L	10.0	ND	92.9	75-123			
Benzene	10.2	0.20	ug/L	10.0	ND	102	80-120			
Trichloroethene	10.3	0.20	ug/L	10.0	ND	103	80-120			
1,2-Dichloropropane	10.7	0.20	ug/L	10.0	ND	107	80-120			
Bromodichloromethane	10.1	0.20	ug/L	10.0	ND	101	80-121			
Dibromomethane	10.0	0.20	ug/L	10.0	ND	100	80-120			
2-Chloroethyl vinyl ether	ND	0.50	ug/L	10.0	ND		74-127			*, U
4-Methyl-2-Pentanone	51.4	2.50	ug/L	50.0	ND	103	67-133			
cis-1,3-Dichloropropene	10.0	0.20	ug/L	10.0	ND	100	80-124			
Toluene	10.2	0.20	ug/L	10.0	ND	102	80-120			
trans-1,3-Dichloropropene	9.84	0.20	ug/L	10.0	ND	98.4	71-127			
2-Hexanone	50.1	5.00	ug/L	50.0	ND	100	69-133			
1,1,2-Trichloroethane	10.9	0.20	ug/L	10.0	ND	109	80-121			
1,3-Dichloropropane	9.76	0.10	ug/L	10.0	ND	97.6	80-120			
Tetrachloroethene	10.2	0.20	ug/L	10.0	ND	102	80-120			
Dibromochloromethane	9.84	0.20	ug/L	10.0	ND	98.4	65-135			
1,2-Dibromoethane	10.4	0.10	ug/L	10.0	ND	104	80-121			
Chlorobenzene	9.97	0.20	ug/L	10.0	ND	99.7	80-120			
Ethylbenzene	10.3	0.20	ug/L	10.0	ND	103	80-120			
1,1,1,2-Tetrachloroethane	10.6	0.20	ug/L	10.0	ND	106	80-120			
m,p-Xylene	20.7	0.40	ug/L	20.0	ND	104	80-121			
o-Xylene	10.2	0.20	ug/L	10.0	ND	102	80-121			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BII0496-MS1)	**Source: 20I0225-04**		Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 21:30							
Xylenes, total	31.0	0.60	ug/L	30.0	ND	103	76-127			
Styrene	10.4	0.20	ug/L	10.0	ND	104	80-124			
Bromoform	10.9	0.20	ug/L	10.0	ND	109	51-134			
1,1,2,2-Tetrachloroethane	10.2	0.10	ug/L	10.0	ND	102	77-123			
1,2,3-Trichloropropane	10.6	0.20	ug/L	10.0	ND	106	76-125			
trans-1,4-Dichloro 2-Butene	8.86	1.00	ug/L	10.0	ND	88.6	55-129			
n-Propylbenzene	9.85	0.20	ug/L	10.0	ND	98.5	78-130			
Bromobenzene	9.94	0.20	ug/L	10.0	ND	99.4	80-120			
Isopropyl Benzene	9.85	0.20	ug/L	10.0	ND	98.5	80-128			
2-Chlorotoluene	9.59	0.10	ug/L	10.0	ND	95.9	78-122			
4-Chlorotoluene	9.59	0.20	ug/L	10.0	ND	95.9	80-121			
t-Butylbenzene	9.87	0.20	ug/L	10.0	ND	98.7	78-125			
1,3,5-Trimethylbenzene	9.96	0.20	ug/L	10.0	ND	99.6	80-129			
1,2,4-Trimethylbenzene	9.89	0.20	ug/L	10.0	ND	98.9	80-127			
s-Butylbenzene	9.98	0.20	ug/L	10.0	ND	99.8	78-129			
4-Isopropyl Toluene	10.0	0.20	ug/L	10.0	ND	100	79-130			
1,3-Dichlorobenzene	9.96	0.20	ug/L	10.0	ND	99.6	80-120			
1,4-Dichlorobenzene	9.92	0.20	ug/L	10.0	ND	99.2	80-120			
n-Butylbenzene	9.79	0.20	ug/L	10.0	ND	97.9	74-129			
1,2-Dichlorobenzene	10.2	0.20	ug/L	10.0	ND	102	80-120			
1,2-Dibromo-3-chloropropane	11.3	0.50	ug/L	10.0	ND	113	62-123			
1,2,4-Trichlorobenzene	10.7	0.50	ug/L	10.0	ND	107	64-124			
Hexachloro-1,3-Butadiene	10.1	0.20	ug/L	10.0	ND	101	58-123			
Naphthalene	11.9	0.50	ug/L	10.0	ND	119	50-134			
1,2,3-Trichlorobenzene	11.3	0.20	ug/L	10.0	ND	113	49-133			
Dichlorodifluoromethane	9.44	0.20	ug/L	10.0	ND	94.4	48-147			
Surrogate: 1,2-Dichloroethane-d4	4.64		ug/L	*5.00*	*4.27*	*92.8*	*80-129*			
Surrogate: Toluene-d8	5.16		ug/L	*5.00*	*4.97*	*103*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.07		ug/L	*5.00*	*5.19*	*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.94		ug/L	*5.00*	*5.05*	*98.7*	*80-120*			

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

Matrix Spike Dup (BII0496-MSD1)	**Source: 20I0225-04**		Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 21:56							
Chloromethane	7.76	0.50	ug/L	10.0	ND	77.6	60-138	8.26	30	Q
Vinyl Chloride	7.87	0.10	ug/L	10.0	ND	78.7	66-133	4.66	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BII0496-MSD1)	**Source: 20I0225-04**		Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 21:56							
Bromomethane	9.42	1.00	ug/L	10.0	ND	94.2	72-131	11.00	30	
Chloroethane	11.9	0.20	ug/L	10.0	ND	119	60-155	10.60	30	
Trichlorofluoromethane	10.2	0.20	ug/L	10.0	ND	102	80-129	6.99	30	
Acrolein	82.5	2.50	ug/L	50.0	ND	165	52-144	2.93	30	*, Q
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.06	0.20	ug/L	10.0	ND	90.6	76-129	13.20	30	
Acetone	45.4	5.00	ug/L	50.0	ND	86.6	58-142	10.30	30	
1,1-Dichloroethene	9.18	0.20	ug/L	10.0	ND	91.8	69-135	8.01	30	
Iodomethane	9.82	0.50	ug/L	10.0	ND	98.2	56-147	9.19	30	
Methylene Chloride	8.99	1.00	ug/L	10.0	ND	89.9	65-135	10.00	30	
Acrylonitrile	9.20	1.00	ug/L	10.0	ND	92.0	64-134	9.54	30	
Carbon Disulfide	8.83	0.10	ug/L	10.0	ND	87.8	78-125	10.60	30	
trans-1,2-Dichloroethene	8.84	0.20	ug/L	10.0	ND	88.4	78-128	11.10	30	
Vinyl Acetate	7.29	0.20	ug/L	10.0	ND	72.9	55-138	9.26	30	
1,1-Dichloroethane	8.99	0.20	ug/L	10.0	ND	89.9	76-124	12.00	30	
2-Butanone	45.8	5.00	ug/L	50.0	ND	91.6	61-140	8.80	30	
2,2-Dichloropropane	8.26	0.10	ug/L	10.0	ND	82.6	78-125	9.55	30	
cis-1,2-Dichloroethene	9.47	0.20	ug/L	10.0	ND	94.7	80-121	11.10	30	
Chloroform	8.55	0.20	ug/L	10.0	ND	85.5	80-122	9.75	30	
Bromochloromethane	8.99	0.20	ug/L	10.0	ND	89.9	80-121	17.10	30	
1,1,1-Trichloroethane	9.11	0.20	ug/L	10.0	ND	91.1	79-123	9.70	30	
1,1-Dichloropropene	8.55	0.10	ug/L	10.0	ND	85.5	80-120	10.80	30	
Carbon tetrachloride	9.21	0.20	ug/L	10.0	ND	92.1	53-137	11.90	30	
1,2-Dichloroethane	8.56	0.20	ug/L	10.0	ND	85.6	75-123	8.15	30	
Benzene	9.37	0.20	ug/L	10.0	ND	93.7	80-120	8.82	30	
Trichloroethene	9.37	0.20	ug/L	10.0	ND	93.7	80-120	9.79	30	
1,2-Dichloropropane	9.68	0.20	ug/L	10.0	ND	96.8	80-120	9.71	30	
Bromodichloromethane	9.23	0.20	ug/L	10.0	ND	92.3	80-121	8.71	30	
Dibromomethane	9.63	0.20	ug/L	10.0	ND	96.3	80-120	3.69	30	
2-Chloroethyl vinyl ether	ND	0.50	ug/L	10.0	ND		74-127			*, U
4-Methyl-2-Pentanone	49.2	2.50	ug/L	50.0	ND	98.4	67-133	4.40	30	
cis-1,3-Dichloropropene	9.43	0.20	ug/L	10.0	ND	94.3	80-124	6.23	30	
Toluene	9.51	0.20	ug/L	10.0	ND	95.1	80-120	7.33	30	
trans-1,3-Dichloropropene	9.00	0.20	ug/L	10.0	ND	90.0	71-127	8.84	30	
2-Hexanone	45.4	5.00	ug/L	50.0	ND	90.7	69-133	9.83	30	
1,1,2-Trichloroethane	9.74	0.20	ug/L	10.0	ND	97.4	80-121	11.60	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BII0496-MSD1)	**Source: 20I0225-04**		Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 21:56							
1,3-Dichloropropane	8.90	0.10	ug/L	10.0	ND	89.0	80-120	9.22	30	
Tetrachloroethene	9.68	0.20	ug/L	10.0	ND	96.8	80-120	5.49	30	
Dibromochloromethane	8.96	0.20	ug/L	10.0	ND	89.6	65-135	9.36	30	
1,2-Dibromoethane	9.39	0.10	ug/L	10.0	ND	93.9	80-121	10.50	30	
Chlorobenzene	9.40	0.20	ug/L	10.0	ND	94.0	80-120	5.91	30	
Ethylbenzene	9.55	0.20	ug/L	10.0	ND	95.5	80-120	7.78	30	
1,1,1,2-Tetrachloroethane	9.64	0.20	ug/L	10.0	ND	96.4	80-120	9.43	30	
m,p-Xylene	18.8	0.40	ug/L	20.0	ND	93.8	80-121	9.95	30	
o-Xylene	9.52	0.20	ug/L	10.0	ND	95.2	80-121	7.17	30	
Xylenes, total	28.3	0.60	ug/L	30.0	ND	94.3	76-127	9.02	30	
Styrene	9.11	0.20	ug/L	10.0	ND	91.1	80-124	12.90	30	
Bromoform	9.64	0.20	ug/L	10.0	ND	96.4	51-134	11.80	30	
1,1,2,2-Tetrachloroethane	9.89	0.10	ug/L	10.0	ND	98.9	77-123	2.95	30	
1,2,3-Trichloropropane	9.26	0.20	ug/L	10.0	ND	92.6	76-125	13.70	30	
trans-1,4-Dichloro 2-Butene	8.12	1.00	ug/L	10.0	ND	81.2	55-129	8.77	30	
n-Propylbenzene	9.26	0.20	ug/L	10.0	ND	92.6	78-130	6.17	30	
Bromobenzene	9.04	0.20	ug/L	10.0	ND	90.4	80-120	9.55	30	
Isopropyl Benzene	9.31	0.20	ug/L	10.0	ND	93.1	80-128	5.59	30	
2-Chlorotoluene	8.95	0.10	ug/L	10.0	ND	89.5	78-122	6.89	30	
4-Chlorotoluene	9.11	0.20	ug/L	10.0	ND	91.1	80-121	5.14	30	
t-Butylbenzene	9.03	0.20	ug/L	10.0	ND	90.3	78-125	8.89	30	
1,3,5-Trimethylbenzene	9.28	0.20	ug/L	10.0	ND	92.8	80-129	7.06	30	
1,2,4-Trimethylbenzene	9.21	0.20	ug/L	10.0	ND	92.1	80-127	7.15	30	
s-Butylbenzene	9.39	0.20	ug/L	10.0	ND	93.9	78-129	6.14	30	
4-Isopropyl Toluene	9.33	0.20	ug/L	10.0	ND	93.3	79-130	7.29	30	
1,3-Dichlorobenzene	9.44	0.20	ug/L	10.0	ND	94.4	80-120	5.29	30	
1,4-Dichlorobenzene	9.01	0.20	ug/L	10.0	ND	90.1	80-120	9.56	30	
n-Butylbenzene	9.05	0.20	ug/L	10.0	ND	90.5	74-129	7.86	30	
1,2-Dichlorobenzene	9.36	0.20	ug/L	10.0	ND	93.6	80-120	8.17	30	
1,2-Dibromo-3-chloropropane	11.2	0.50	ug/L	10.0	ND	112	62-123	0.16	30	
1,2,4-Trichlorobenzene	10.3	0.50	ug/L	10.0	ND	103	64-124	4.59	30	
Hexachloro-1,3-Butadiene	9.26	0.20	ug/L	10.0	ND	92.6	58-123	8.91	30	
Naphthalene	11.5	0.50	ug/L	10.0	ND	115	50-134	3.95	30	
1,2,3-Trichlorobenzene	11.2	0.20	ug/L	10.0	ND	112	49-133	1.22	30	
Dichlorodifluoromethane	8.06	0.20	ug/L	10.0	ND	80.6	48-147	15.80	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

Volatile Organic Compounds - Quality Control

Batch BII0496 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BII0496-MSD1)	**Source: 20I0225-04**		Prepared: 18-Sep-2020 Analyzed: 18-Sep-2020 21:56							
Surrogate: 1,2-Dichloroethane-d4	4.64		ug/L	*5.00*	*4.27*	*92.9*	*80-129*			
Surrogate: Toluene-d8	4.82		ug/L	*5.00*	*4.97*	*96.4*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.06		ug/L	*5.00*	*5.19*	*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.83		ug/L	*5.00*	*5.05*	*96.6*	*80-120*			

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

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

Semivolatile Organic Compounds - SIM - Quality Control

Batch BII0598 - EPA 3520C (Liq Liq)

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0598-BLK1)				Prepared: 22-Sep-2020 Analyzed: 26-Sep-2020 12:26						
1,4-Dioxane	ND	0.4	ug/L							U
Surrogate: 1,4-Dioxane-d8	6.46		ug/L	*10.0*		*64.6*	*33.6-120*			
LCS (BII0598-BS1)				Prepared: 22-Sep-2020 Analyzed: 26-Sep-2020 12:51						
1,4-Dioxane	6.2	0.4	ug/L	10.0		62.4	39.9-120			
Surrogate: 1,4-Dioxane-d8	6.75		ug/L	*10.0*		*67.5*	*33.6-120*			
LCS Dup (BII0598-BSD1)				Prepared: 22-Sep-2020 Analyzed: 26-Sep-2020 13:16						
1,4-Dioxane	5.8	0.4	ug/L	10.0		57.7	39.9-120	7.91	30	
Surrogate: 1,4-Dioxane-d8	6.03		ug/L	*10.0*		*60.3*	*33.6-120*			
Matrix Spike (BII0598-MS1)	**Source: 20I0225-04**			Prepared: 22-Sep-2020 Analyzed: 26-Sep-2020 15:20						
1,4-Dioxane	8.2	0.4	ug/L	10.0	1.6	65.5	35.1-120			
Surrogate: 1,4-Dioxane-d8	6.53		ug/L	*10.0*	*6.06*	*65.3*	*33.6-120*			

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

Matrix Spike Dup (BII0598-MSD1)	**Source: 20I0225-04**			Prepared: 22-Sep-2020 Analyzed: 26-Sep-2020 15:45						
1,4-Dioxane	7.3	0.4	ug/L	10.0	1.6	56.1	35.1-120	12.10	30	
Surrogate: 1,4-Dioxane-d8	5.87		ug/L	*10.0*	*6.06*	*58.7*	*33.6-120*			

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

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

Petroleum Hydrocarbons - Quality Control

Batch BII0600 - EPA 3510C SepF

Instrument: FID4 Analyst: CTO

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0600-BLK1)				Prepared: 22-Sep-2020 Analyzed: 01-Oct-2020 17:20						
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	0.193		mg/L	*0.225*		*85.7*	*50-150*			
Surrogate: n-Triacontane	0.195		mg/L	*0.225*		*86.7*	*50-150*			

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Certified Analyses included in this Report

Analyte	Certifications
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Chloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Chloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,CALAP
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,CALAP
Chloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,CALAP
Chloroethane	DoD-ELAP,ADEC,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,CALAP
Trichlorofluoromethane	DoD-ELAP,ADEC,CALAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,CALAP,WADOE
Acrolein	DoD-ELAP,NELAP,CALAP
Acrolein	DoD-ELAP,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,CALAP
Acetone	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE

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1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,CALAP
Iodomethane	DoD-ELAP,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,CALAP,WADOE
Iodomethane	DoD-ELAP,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,CALAP
Acrylonitrile	DoD-ELAP,NELAP,CALAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Acrylonitrile	DoD-ELAP,CALAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,CALAP
Carbon Disulfide	DoD-ELAP,NELAP,CALAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,CALAP
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,CALAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
Vinyl Acetate	DoD-ELAP,NELAP,CALAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,CALAP
Vinyl Acetate	DoD-ELAP,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Butanone	DoD-ELAP,NELAP,CALAP
2-Butanone	DoD-ELAP,NELAP,WADOE
2-Butanone	DoD-ELAP,CALAP,WADOE
2-Butanone	DoD-ELAP,NELAP,CALAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
2,2-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE

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cis-1,2-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
Chloroform	DoD-ELAP,ADEC,NELAP,CALAP
Chloroform	DoD-ELAP,ADEC,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Bromochloromethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,1-Trichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,CALAP
Benzene	DoD-ELAP,ADEC,CALAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
Trichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,CALAP,WADOE

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Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Dibromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,CALAP
Dibromomethane	DoD-ELAP,ADEC,CALAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,CALAP
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,CALAP
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
Toluene	DoD-ELAP,ADEC,NELAP,CALAP
Toluene	DoD-ELAP,ADEC,CALAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,CALAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,CALAP
2-Hexanone	DoD-ELAP,CALAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2-Trichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE

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Tetrachloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,CALAP
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,CALAP
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,CALAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
Chlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,CALAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,CALAP
Ethylbenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,CALAP
o-Xylene	DoD-ELAP,ADEC,CALAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,CALAP
o-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,CALAP,WADOE
Styrene	DoD-ELAP,NELAP,CALAP
Styrene	DoD-ELAP,CALAP,WADOE
Bromoform	DoD-ELAP,NELAP,CALAP
Bromoform	DoD-ELAP,CALAP,WADOE
Bromoform	DoD-ELAP,NELAP,CALAP,WADOE

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Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,2,3-Trichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,CALAP
n-Propylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,CALAP
n-Propylbenzene	DoD-ELAP,CALAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,CALAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,CALAP
Bromobenzene	DoD-ELAP,NELAP,CALAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,CALAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,CALAP
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP
2-Chlorotoluene	DoD-ELAP,ADEC,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP
4-Chlorotoluene	DoD-ELAP,ADEC,CALAP,WADOE
t-Butylbenzene	DoD-ELAP,CALAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,CALAP
t-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,CALAP,WADOE

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1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,CALAP
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,CALAP
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,CALAP
s-Butylbenzene	DoD-ELAP,CALAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,CALAP
4-Isopropyl Toluene	DoD-ELAP,CALAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,CALAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,CALAP
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE

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Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,CALAP
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,CALAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,CALAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,CALAP
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,CALAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,CALAP
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,CALAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,CALAP
n-Hexane	WADOE
n-Hexane	WADOE
n-Hexane	
n-Hexane	WADOE
2-Pentanone	WADOE
2-Pentanone	WADOE
2-Pentanone	
2-Pentanone	WADOE

EPA 8270E-SIM in Water

1,4-Dioxane	WADOE,DoD-ELAP
1,4-Dioxane	WADOE,NELAP,DoD-ELAP
1,4-Dioxane	WADOE,NELAP,DoD-ELAP
1,4-Dioxane	NELAP,DoD-ELAP

NWTPH-HCID in Water

Gasoline Range Organics (Tol-C12)	NELAP,DoD-ELAP,WADOE
Gasoline Range Organics (Tol-C12)	NELAP,DoD-ELAP,WADOE
Gasoline Range Organics (Tol-C12)	DoD-ELAP,WADOE
Gasoline Range Organics (Tol-C12)	NELAP,DoD-ELAP
Diesel Range Organics (C12-C24)	NELAP,DoD-ELAP,WADOE
Diesel Range Organics (C12-C24)	NELAP,DoD-ELAP

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

Diesel Range Organics (C12-C24)	DoD-ELAP,WADOE
Diesel Range Organics (C12-C24)	NELAP,DoD-ELAP,WADOE
Motor Oil Range Organics (C24-C38)	NELAP,DoD-ELAP
Motor Oil Range Organics (C24-C38)	DoD-ELAP,WADOE
Motor Oil Range Organics (C24-C38)	NELAP,DoD-ELAP,WADOE
Motor Oil Range Organics (C24-C38)	NELAP,DoD-ELAP,WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:34

Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
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, Incorporated
Analytical Chemists and Consultants

02 October 2020

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

RE: Landsburg

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)
20I0266	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, Inc.

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 it entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006

PJLA Testing
Accreditation # 66169

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 20I0266	Turn-around Requested:	Page: 1 of 1
ARI Client Company: Golder	Phone: 425 883 0777	Date: 9/18/20 · Ice Present? Yes
Client Contact: Gary Zimmerman, Joseph Xi		No. of Coolers: 3 · Cooler Temps: See CRF
Client Project Name: Landsburg GW		
Client Project #: 923100000.6.2020	Samplers: Haskins / Doggett	

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

Sample ID	Date	Time	Matrix	No. Containers	VOCs (client list)	TPH HCID (need follow ups)						Notes/Comments
LMW-6-0920	9/17/20	0840	GW	9	X	X						
LMW-11-0920	↓	0945	GW	9	X	X						
LMW-15-0920	↓	1045	GW	9	X	X						
LMW-14-0920	↓	1200	GW	9	X	X						
LMW-7-0920	↓	1345	GW	9	X	X						
LMW-9-0920	↓	1503	GW	9	X	X						
LMW-3-0920	9/18/20	0850	GW	9	X	X						
LMW-5-0920	↓	0949	GW	9	X	X						
LMW-8-0920	↓	1100	GW	9	X	X						
Trip Blank		—	DI	3	X							

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
Ecology EIM EDD; Client specific RLs and analyte lists	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: Turner Doggett	Printed Name: Jacob Walter	Printed Name:	Printed Name:
	Company: Golder	Company: ARI	Company:	Company:
	Date & Time: 9/18/20 12:30	Date & Time: 09/18/2020 1230	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: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LMW-6-0920	20I0266-01	Water	17-Sep-2020 08:40	18-Sep-2020 12:30
LMW-11-0920	20I0266-02	Water	17-Sep-2020 09:45	18-Sep-2020 12:30
LMW-15-0920	20I0266-03	Water	17-Sep-2020 10:45	18-Sep-2020 12:30
LMW-14-0920	20I0266-04	Water	17-Sep-2020 12:00	18-Sep-2020 12:30
LMW-7-0920	20I0266-05	Water	17-Sep-2020 13:45	18-Sep-2020 12:30
LMW-9-0920	20I0266-06	Water	17-Sep-2020 15:03	18-Sep-2020 12:30
LMW-3-0920	20I0266-07	Water	18-Sep-2020 08:50	18-Sep-2020 12:30
LMW-5-0920	20I0266-08	Water	18-Sep-2020 09:49	18-Sep-2020 12:30
LMW-8-0920	20I0266-09	Water	18-Sep-2020 11:00	18-Sep-2020 12:30
Trip Blanks	20I0266-10	Water	17-Sep-2020 08:40	18-Sep-2020 12:30

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

Work Order Case Narrative

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.

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

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 low in the CCAL and acrolein is out of control high. 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.

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Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Golder

Project Name: Landsburg Gw

COC No(s): (NA)

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

Assigned ARI Job No: 20I0266

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) 2.1 2.6 3.4 ___ ___ ___

Time 1230

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

Temp Gun ID#: DOO5206

Cooler Accepted by: JSn Date: 09/18/2020 Time: 1230

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: KD Date: 9/21/20 Time: 0820 Labels checked by: KD

***** 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:

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-6-0920

20I0266-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 08:40

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 13:42

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0266-01 E

Preparation Batch: BII0580 — Sample Size: 10 mL

Prepared: 09/22/2020 — 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	2.50	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	0.50	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	0.10	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	0.10	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	0.50	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: Landsburg	**Reported:**
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LMW-6-0920

20I0266-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 08:40

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 13:42

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*106*	*%*	

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-6-0920

20I0266-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 08:40

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 13:42

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*90.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*104*	*%*	

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Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-6-0920

20I0266-01 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/17/2020 08:40

Instrument: FID4 Analyst: CTO — Analyzed: 10/01/2020 13:34

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20I0266-01 A 01

Preparation Batch: BII0648 — Sample Size: 500 mL

Prepared: 09/23/2020 — 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 %*	*97.7*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*97.6*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-11-0920

20I0266-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 09:45

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 14:08

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0266-02 E

Preparation Batch: BII0580 — Sample Size: 10 mL

Prepared: 09/22/2020 — 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	2.50	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	0.50	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	0.10	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	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-11-0920

20I0266-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 09:45

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 14:08

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-11-0920

20I0266-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 09:45

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 14:08

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*96.9*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*97.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*103*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-11-0920

20I0266-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/17/2020 09:45

Instrument: FID4 Analyst: CTO — Analyzed: 10/01/2020 13:54

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20I0266-02 A 01

Preparation Batch: BII0648 — Sample Size: 500 mL

Prepared: 09/23/2020 — 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 %*	*96.8*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*97.9*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-15-0920

20I0266-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 10:45

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 14:34

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0266-03 E

Preparation Batch: BII0580 — Sample Size: 10 mL

Prepared: 09/22/2020 — 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	2.50	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	0.50	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	0.10	0.13	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	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-15-0920

20I0266-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 10:45

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 14:34

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	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-Oct-2020 17:47

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20I0266-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 10:45

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 14:34

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*98.2*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*94.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*98.9*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-15-0920

20I0266-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/17/2020 10:45

Instrument: FID4 Analyst: CTO — Analyzed: 10/01/2020 14:15

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20I0266-03 A 01

Preparation Batch: BII0648 — Sample Size: 500 mL

Prepared: 09/23/2020 — 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 %*	*98.1*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*95.6*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-14-0920

20I0266-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 12:00

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 15:00

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0266-04 F

Preparation Batch: BII0580 — Sample Size: 10 mL

Prepared: 09/22/2020 — 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	2.50	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	0.50	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	0.10	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	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-14-0920

20I0266-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 12:00

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 15:00

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

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20I0266-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 12:00

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 15:00

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*102*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*100*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*93.3*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-14-0920

20I0266-04 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/17/2020 12:00

Instrument: FID4 Analyst: CTO — Analyzed: 10/01/2020 14:36

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20I0266-04 A 01

Preparation Batch: BII0648 — Sample Size: 500 mL

Prepared: 09/23/2020 — 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 %*	*93.1*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*94.2*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-7-0920

20I0266-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 13:45

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 15:26

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0266-05 F

Preparation Batch: BII0580 — Sample Size: 10 mL

Prepared: 09/22/2020 — 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	2.50	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	0.50	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	0.10	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	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-7-0920

20I0266-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 13:45

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 15:26

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*106*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-7-0920

20I0266-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 13:45

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 15:26

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*98.2*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*99.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.8*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-7-0920

20I0266-05 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/17/2020 13:45
Instrument: FID4 Analyst: CTO — Analyzed: 10/01/2020 14:56

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20I0266-05 A 01
Preparation Batch: BII0648 — Sample Size: 500 mL
Prepared: 09/23/2020 — 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 %*	*94.9*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*96.4*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-9-0920

20I0266-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 15:03

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 15:51

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0266-06 F

Preparation Batch: BII0580 — Sample Size: 10 mL

Prepared: 09/22/2020 — 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	2.50	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	0.50	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	0.10	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	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-9-0920

20I0266-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 15:03

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 15:51

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*104*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-9-0920

20I0266-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 15:03

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 15:51

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*99.5*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*100*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*100*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-9-0920

20I0266-06 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/17/2020 15:03

Instrument: FID4 Analyst: CTO — Analyzed: 10/01/2020 15:17

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20I0266-06 A 01

Preparation Batch: BII0648 — Sample Size: 500 mL

Prepared: 09/23/2020 — 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 %*	*99.9*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*99.0*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-3-0920

20I0266-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/18/2020 08:50

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 16:17

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0266-07 G

Preparation Batch: BII0580 — Sample Size: 10 mL

Prepared: 09/22/2020 — 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	2.50	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	0.50	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	0.10	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	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-3-0920

20I0266-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/18/2020 08:50

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 16:17

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*125*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-3-0920

20I0266-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/18/2020 08:50

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 16:17

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*97.6*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*106*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.5*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-3-0920

20I0266-07 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/18/2020 08:50

Instrument: FID4 Analyst: CTO — Analyzed: 10/01/2020 15:37

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20I0266-07 A 01

Preparation Batch: BII0648 — Sample Size: 500 mL

Prepared: 09/23/2020 — 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 %*	*97.8*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*97.7*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-5-0920

20I0266-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/18/2020 09:49

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 16:43

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0266-08 G

Preparation Batch: BII0580 — Sample Size: 10 mL

Prepared: 09/22/2020 — 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	2.50	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	0.50	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	0.10	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	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-5-0920

20I0266-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/18/2020 09:49

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 16:43

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*117*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-5-0920

20I0266-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/18/2020 09:49

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 16:43

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*98.6*	*%*	
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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-5-0920

20I0266-08 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/18/2020 09:49
Instrument: FID4 Analyst: CTO — Analyzed: 10/01/2020 15:58

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20I0266-08 A 01
Preparation Batch: BII0648 — Sample Size: 500 mL
Prepared: 09/23/2020 — 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 %*	*97.2*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*92.0*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-8-0920

20I0266-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/18/2020 11:00
Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 17:09

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0266-09 F
Preparation Batch: BII0580 — Sample Size: 10 mL
Prepared: 09/22/2020 — 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	2.50	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	5.94	ug/L	
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	0.50	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	0.10	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	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-8-0920

20I0266-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/18/2020 11:00

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 17:09

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*111*	*%*	

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-8-0920

20I0266-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/18/2020 11:00

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 17:09

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*98.6*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*102*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

LMW-8-0920

20I0266-09 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/18/2020 11:00

Instrument: FID4 Analyst: CTO — Analyzed: 10/01/2020 16:19

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20I0266-09 A 01

Preparation Batch: BII0648 — Sample Size: 500 mL

Prepared: 09/23/2020 — 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 %*	*98.0*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*93.0*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

Trip Blanks

20I0266-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 08:40
Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 11:58

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20I0266-10 A
Preparation Batch: BII0580 — Sample Size: 10 mL
Prepared: 09/22/2020 — 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	2.50	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	0.50	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	0.10	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	0.10	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	0.50	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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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

Trip Blanks

20I0266-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 08:40

Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 11:58

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	0.10	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	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	0.20	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.20	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	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

Trip Blanks

20I0266-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/17/2020 08:40
Instrument: NT3 Analyst: PKC — Analyzed: 09/22/2020 11:58

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*99.9*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*95.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*103*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

Volatile Organic Compounds - Quality Control

Batch BII0580 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0580-BLK1)			Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 11:32							
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	2.50	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	0.50	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.10	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	0.10	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	0.50	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

Volatile Organic Compounds - Quality Control

Batch BII0580 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0580-BLK1)			Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 11:32							
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	0.10	ug/L							U
1,2,3-Trichloropropane	ND	0.20	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	0.20	ug/L							U
Naphthalene	ND	0.50	ug/L							U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

Volatile Organic Compounds - Quality Control

Batch BII0580 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0580-BLK1)				Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 11:32						
1,2,3-Trichlorobenzene	ND	0.20	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.96		ug/L	*5.00*		*99.2*	*80-129*			
Surrogate: Toluene-d8	5.12		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.87		ug/L	*5.00*		*97.4*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.91		ug/L	*5.00*		*98.3*	*80-120*			
LCS (BII0580-BS1)				Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 09:22						
Chloromethane	6.42	0.50	ug/L	10.0		64.2	60-138			Q
Vinyl Chloride	9.06	0.10	ug/L	10.0		90.6	66-133			
Bromomethane	9.30	1.00	ug/L	10.0		93.0	72-131			
Chloroethane	9.20	0.20	ug/L	10.0		92.0	60-155			
Trichlorofluoromethane	8.79	0.20	ug/L	10.0		87.9	80-129			
Acrolein	81.8	2.50	ug/L	50.0		164	52-144			*, Q
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.3	0.20	ug/L	10.0		103	76-129			
Acetone	44.2	5.00	ug/L	50.0		88.4	58-142			
1,1-Dichloroethene	9.05	0.20	ug/L	10.0		90.5	69-135			
Iodomethane	9.10	0.50	ug/L	10.0		91.0	56-147			
Methylene Chloride	8.61	1.00	ug/L	10.0		86.1	65-135			
Acrylonitrile	9.10	1.00	ug/L	10.0		91.0	64-134			
Carbon Disulfide	8.69	0.10	ug/L	10.0		86.9	78-125			
trans-1,2-Dichloroethene	9.31	0.20	ug/L	10.0		93.1	78-128			
Vinyl Acetate	9.16	0.20	ug/L	10.0		91.6	55-138			
1,1-Dichloroethane	9.97	0.20	ug/L	10.0		99.7	76-124			
2-Butanone	43.3	5.00	ug/L	50.0		86.5	61-140			
2,2-Dichloropropane	11.1	0.10	ug/L	10.0		111	78-125			
cis-1,2-Dichloroethene	9.81	0.20	ug/L	10.0		98.1	80-121			
Chloroform	9.31	0.20	ug/L	10.0		93.1	80-122			
Bromochloromethane	9.12	0.20	ug/L	10.0		91.2	80-121			
1,1,1-Trichloroethane	10.1	0.20	ug/L	10.0		101	79-123			
1,1-Dichloropropene	8.95	0.10	ug/L	10.0		89.5	80-120			
Carbon tetrachloride	10.6	0.20	ug/L	10.0		106	53-137			
1,2-Dichloroethane	8.93	0.20	ug/L	10.0		89.3	75-123			
Benzene	9.29	0.20	ug/L	10.0		92.9	80-120			
Trichloroethene	9.33	0.20	ug/L	10.0		93.3	80-120			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

Volatile Organic Compounds - Quality Control

Batch BII0580 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BII0580-BS1)				Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 09:22						
1,2-Dichloropropane	9.91	0.20	ug/L	10.0		99.1	80-120			
Bromodichloromethane	9.70	0.20	ug/L	10.0		97.0	80-121			
Dibromomethane	8.79	0.20	ug/L	10.0		87.9	80-120			
2-Chloroethyl vinyl ether	8.13	0.50	ug/L	10.0		81.3	74-127			
4-Methyl-2-Pentanone	42.5	2.50	ug/L	50.0		85.0	67-133			
cis-1,3-Dichloropropene	9.70	0.20	ug/L	10.0		97.0	80-124			
Toluene	9.43	0.20	ug/L	10.0		94.3	80-120			
trans-1,3-Dichloropropene	9.11	0.20	ug/L	10.0		91.1	71-127			
2-Hexanone	42.1	5.00	ug/L	50.0		84.2	69-133			
1,1,2-Trichloroethane	9.31	0.20	ug/L	10.0		93.1	80-121			
1,3-Dichloropropane	8.83	0.10	ug/L	10.0		88.3	80-120			
Tetrachloroethene	10.2	0.20	ug/L	10.0		102	80-120			
Dibromochloromethane	8.65	0.20	ug/L	10.0		86.5	65-135			
1,2-Dibromoethane	8.87	0.10	ug/L	10.0		88.7	80-121			
Chlorobenzene	9.33	0.20	ug/L	10.0		93.3	80-120			
Ethylbenzene	9.71	0.20	ug/L	10.0		97.1	80-120			
1,1,1,2-Tetrachloroethane	9.82	0.20	ug/L	10.0		98.2	80-120			
m,p-Xylene	19.4	0.40	ug/L	20.0		96.9	80-121			
o-Xylene	9.56	0.20	ug/L	10.0		95.6	80-121			
Xylenes, total	28.9	0.60	ug/L	30.0		96.4	76-127			
Styrene	9.56	0.20	ug/L	10.0		95.6	80-124			
Bromoform	9.57	0.20	ug/L	10.0		95.7	51-134			
1,1,2,2-Tetrachloroethane	8.49	0.10	ug/L	10.0		84.9	77-123			
1,2,3-Trichloropropane	8.23	0.20	ug/L	10.0		82.3	76-125			
trans-1,4-Dichloro 2-Butene	8.77	1.00	ug/L	10.0		87.7	55-129			
n-Propylbenzene	9.59	0.20	ug/L	10.0		95.9	78-130			
Bromobenzene	8.77	0.20	ug/L	10.0		87.7	80-120			
Isopropyl Benzene	9.59	0.20	ug/L	10.0		95.9	80-128			
2-Chlorotoluene	9.27	0.10	ug/L	10.0		92.7	78-122			
4-Chlorotoluene	9.11	0.20	ug/L	10.0		91.1	80-121			
t-Butylbenzene	9.13	0.20	ug/L	10.0		91.3	78-125			
1,3,5-Trimethylbenzene	9.48	0.20	ug/L	10.0		94.8	80-129			
1,2,4-Trimethylbenzene	9.35	0.20	ug/L	10.0		93.5	80-127			
s-Butylbenzene	9.57	0.20	ug/L	10.0		95.7	78-129			
4-Isopropyl Toluene	9.71	0.20	ug/L	10.0		97.1	79-130			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

Volatile Organic Compounds - Quality Control

Batch BII0580 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BII0580-BS1)				Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 09:22						
1,3-Dichlorobenzene	9.22	0.20	ug/L	10.0		92.2	80-120			
1,4-Dichlorobenzene	9.04	0.20	ug/L	10.0		90.4	80-120			
n-Butylbenzene	9.89	0.20	ug/L	10.0		98.9	74-129			
1,2-Dichlorobenzene	8.96	0.20	ug/L	10.0		89.6	80-120			
1,2-Dibromo-3-chloropropane	9.05	0.50	ug/L	10.0		90.5	62-123			
1,2,4-Trichlorobenzene	9.06	0.50	ug/L	10.0		90.6	64-124			
Hexachloro-1,3-Butadiene	9.33	0.20	ug/L	10.0		93.3	58-123			
Naphthalene	9.68	0.50	ug/L	10.0		96.8	50-134			
1,2,3-Trichlorobenzene	9.05	0.20	ug/L	10.0		90.5	49-133			
Dichlorodifluoromethane	8.47	0.20	ug/L	10.0		84.7	48-147			
Surrogate: 1,2-Dichloroethane-d4	4.86		ug/L	*5.00*		*97.2*	*80-129*			
Surrogate: Toluene-d8	4.94		ug/L	*5.00*		*98.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.01		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.17		ug/L	*5.00*		*103*	*80-120*			
LCS Dup (BII0580-BSD1)				Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 09:48						
Chloromethane	7.10	0.50	ug/L	10.0		71.0	60-138	10.10	30	Q
Vinyl Chloride	9.53	0.10	ug/L	10.0		95.3	66-133	5.05	30	
Bromomethane	9.92	1.00	ug/L	10.0		99.2	72-131	6.50	30	
Chloroethane	9.99	0.20	ug/L	10.0		99.9	60-155	8.17	30	
Trichlorofluoromethane	9.33	0.20	ug/L	10.0		93.3	80-129	5.92	30	
Acrolein	97.5	2.50	ug/L	50.0		195	52-144	17.50	30	*, Q
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.6	0.20	ug/L	10.0		106	76-129	2.99	30	
Acetone	51.4	5.00	ug/L	50.0		103	58-142	15.10	30	
1,1-Dichloroethene	9.82	0.20	ug/L	10.0		98.2	69-135	8.16	30	
Iodomethane	10.2	0.50	ug/L	10.0		102	56-147	11.10	30	
Methylene Chloride	9.58	1.00	ug/L	10.0		95.8	65-135	10.70	30	
Acrylonitrile	9.61	1.00	ug/L	10.0		96.1	64-134	5.41	30	
Carbon Disulfide	9.29	0.10	ug/L	10.0		92.9	78-125	6.69	30	
trans-1,2-Dichloroethene	9.39	0.20	ug/L	10.0		93.9	78-128	0.91	30	
Vinyl Acetate	10.1	0.20	ug/L	10.0		101	55-138	9.50	30	
1,1-Dichloroethane	10.4	0.20	ug/L	10.0		104	76-124	3.94	30	
2-Butanone	49.7	5.00	ug/L	50.0		99.5	61-140	13.90	30	
2,2-Dichloropropane	11.7	0.10	ug/L	10.0		117	78-125	5.19	30	
cis-1,2-Dichloroethene	10.2	0.20	ug/L	10.0		102	80-121	3.64	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

Volatile Organic Compounds - Quality Control

Batch BII0580 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BII0580-BSD1)				Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 09:48						
Chloroform	10.0	0.20	ug/L	10.0		100	80-122	7.47	30	
Bromochloromethane	10.0	0.20	ug/L	10.0		100	80-121	9.40	30	
1,1,1-Trichloroethane	10.8	0.20	ug/L	10.0		108	79-123	6.70	30	
1,1-Dichloropropene	9.29	0.10	ug/L	10.0		92.9	80-120	3.75	30	
Carbon tetrachloride	11.0	0.20	ug/L	10.0		110	53-137	4.16	30	
1,2-Dichloroethane	9.92	0.20	ug/L	10.0		99.2	75-123	10.60	30	
Benzene	9.54	0.20	ug/L	10.0		95.4	80-120	2.64	30	
Trichloroethene	10.3	0.20	ug/L	10.0		103	80-120	9.72	30	
1,2-Dichloropropane	10.2	0.20	ug/L	10.0		102	80-120	2.79	30	
Bromodichloromethane	10.3	0.20	ug/L	10.0		103	80-121	5.88	30	
Dibromomethane	9.88	0.20	ug/L	10.0		98.8	80-120	11.70	30	
2-Chloroethyl vinyl ether	9.65	0.50	ug/L	10.0		96.5	74-127	17.10	30	
4-Methyl-2-Pentanone	49.2	2.50	ug/L	50.0		98.4	67-133	14.60	30	
cis-1,3-Dichloropropene	10.2	0.20	ug/L	10.0		102	80-124	5.33	30	
Toluene	9.61	0.20	ug/L	10.0		96.1	80-120	1.97	30	
trans-1,3-Dichloropropene	9.92	0.20	ug/L	10.0		99.2	71-127	8.47	30	
2-Hexanone	46.5	5.00	ug/L	50.0		93.1	69-133	10.00	30	
1,1,2-Trichloroethane	10.4	0.20	ug/L	10.0		104	80-121	10.90	30	
1,3-Dichloropropane	9.05	0.10	ug/L	10.0		90.5	80-120	2.49	30	
Tetrachloroethene	10.2	0.20	ug/L	10.0		102	80-120	0.39	30	
Dibromochloromethane	9.47	0.20	ug/L	10.0		94.7	65-135	9.03	30	
1,2-Dibromoethane	9.74	0.10	ug/L	10.0		97.4	80-121	9.25	30	
Chlorobenzene	9.77	0.20	ug/L	10.0		97.7	80-120	4.67	30	
Ethylbenzene	10.1	0.20	ug/L	10.0		101	80-120	3.60	30	
1,1,1,2-Tetrachloroethane	10.6	0.20	ug/L	10.0		106	80-120	7.38	30	
m,p-Xylene	20.2	0.40	ug/L	20.0		101	80-121	4.15	30	
o-Xylene	9.71	0.20	ug/L	10.0		97.1	80-121	1.62	30	
Xylenes, total	29.9	0.60	ug/L	30.0		99.7	76-127	3.32	30	
Styrene	9.80	0.20	ug/L	10.0		98.0	80-124	2.43	30	
Bromoform	10.9	0.20	ug/L	10.0		109	51-134	13.10	30	
1,1,2,2-Tetrachloroethane	10.4	0.10	ug/L	10.0		104	77-123	20.50	30	
1,2,3-Trichloropropane	10.3	0.20	ug/L	10.0		103	76-125	22.30	30	
trans-1,4-Dichloro 2-Butene	9.89	1.00	ug/L	10.0		98.9	55-129	12.00	30	
n-Propylbenzene	10.0	0.20	ug/L	10.0		100	78-130	4.63	30	
Bromobenzene	9.19	0.20	ug/L	10.0		91.9	80-120	4.70	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

Volatile Organic Compounds - Quality Control

Batch BII0580 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BII0580-BSD1)				Prepared: 22-Sep-2020 Analyzed: 22-Sep-2020 09:48						
Isopropyl Benzene	9.93	0.20	ug/L	10.0		99.3	80-128	3.47	30	
2-Chlorotoluene	9.53	0.10	ug/L	10.0		95.3	78-122	2.83	30	
4-Chlorotoluene	9.79	0.20	ug/L	10.0		97.9	80-121	7.20	30	
t-Butylbenzene	9.93	0.20	ug/L	10.0		99.3	78-125	8.41	30	
1,3,5-Trimethylbenzene	10.0	0.20	ug/L	10.0		100	80-129	5.82	30	
1,2,4-Trimethylbenzene	10.2	0.20	ug/L	10.0		102	80-127	8.46	30	
s-Butylbenzene	10.1	0.20	ug/L	10.0		101	78-129	5.20	30	
4-Isopropyl Toluene	10.2	0.20	ug/L	10.0		102	79-130	4.67	30	
1,3-Dichlorobenzene	9.93	0.20	ug/L	10.0		99.3	80-120	7.39	30	
1,4-Dichlorobenzene	9.90	0.20	ug/L	10.0		99.0	80-120	9.09	30	
n-Butylbenzene	10.2	0.20	ug/L	10.0		102	74-129	3.04	30	
1,2-Dichlorobenzene	9.67	0.20	ug/L	10.0		96.7	80-120	7.65	30	
1,2-Dibromo-3-chloropropane	12.0	0.50	ug/L	10.0		120	62-123	27.70	30	
1,2,4-Trichlorobenzene	10.5	0.50	ug/L	10.0		105	64-124	14.70	30	
Hexachloro-1,3-Butadiene	10.0	0.20	ug/L	10.0		100	58-123	7.28	30	
Naphthalene	10.9	0.50	ug/L	10.0		109	50-134	12.20	30	
1,2,3-Trichlorobenzene	10.8	0.20	ug/L	10.0		108	49-133	18.00	30	
Dichlorodifluoromethane	8.99	0.20	ug/L	10.0		89.9	48-147	5.91	30	
Surrogate: 1,2-Dichloroethane-d4	4.70		ug/L	*5.00*		*94.0*	*80-129*			
Surrogate: Toluene-d8	4.91		ug/L	*5.00*		*98.1*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.99		ug/L	*5.00*		*99.8*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.97		ug/L	*5.00*		*99.4*	*80-120*			

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Oct-2020 17:47

Petroleum Hydrocarbons - Quality Control

Batch BII0648 - EPA 3510C SepF

Instrument: FID4 Analyst: CTO

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BII0648-BLK1)				Prepared: 23-Sep-2020 Analyzed: 01-Oct-2020 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	0.218		mg/L	*0.225*		*96.7*	*50-150*			
Surrogate: n-Triacontane	0.221		mg/L	*0.225*		*98.1*	*50-150*			

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Golder Associates	Project: Landsburg	
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Certified Analyses included in this Report

Analyte	Certifications
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Chloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Chloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,CALAP
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,CALAP
Bromomethane	DoD-ELAP,ADEC,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,CALAP
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,CALAP
Trichlorofluoromethane	DoD-ELAP,ADEC,CALAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,CALAP,WADOE
Acrolein	DoD-ELAP,NELAP,CALAP
Acrolein	DoD-ELAP,NELAP,CALAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,CALAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,CALAP
Acetone	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE

Golder Associates	Project: Landsburg	
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1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,CALAP
Iodomethane	DoD-ELAP,NELAP,CALAP,WADOE
Iodomethane	DoD-ELAP,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,CALAP
Acrylonitrile	DoD-ELAP,NELAP,CALAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,CALAP
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Acrylonitrile	DoD-ELAP,CALAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,CALAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,CALAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,CALAP
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,CALAP
Vinyl Acetate	DoD-ELAP,CALAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,CALAP,WADOE
2-Butanone	DoD-ELAP,NELAP,CALAP,WADOE
2-Butanone	DoD-ELAP,NELAP,CALAP
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
2,2-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP

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cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,CALAP
Bromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,CALAP
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,CALAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,CALAP
Benzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE

Golder Associates	Project: Landsburg	
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Bromodichloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,CALAP
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,CALAP
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,CALAP
4-Methyl-2-Pentanone	DoD-ELAP,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,CALAP
Toluene	DoD-ELAP,ADEC,CALAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,CALAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,CALAP
2-Hexanone	DoD-ELAP,CALAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2-Trichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,3-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE

Golder Associates	Project: Landsburg	
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Tetrachloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,CALAP
Tetrachloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,CALAP
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,CALAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
Chlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,CALAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP
m,p-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,CALAP
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,CALAP
o-Xylene	DoD-ELAP,ADEC,CALAP,WADOE
Styrene	DoD-ELAP,NELAP,CALAP
Styrene	DoD-ELAP,CALAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,CALAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,CALAP,WADOE
Bromoform	DoD-ELAP,NELAP,CALAP

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Bromoform	DoD-ELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,CALAP
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,CALAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,CALAP
n-Propylbenzene	DoD-ELAP,CALAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
Bromobenzene	DoD-ELAP,CALAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,CALAP
Bromobenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,CALAP,WADOE
Isopropyl Benzene	DoD-ELAP,CALAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,CALAP
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP
t-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,CALAP
t-Butylbenzene	DoD-ELAP,CALAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE

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1,3,5-Trimethylbenzene	DoD-ELAP,CALAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,CALAP
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,CALAP
1,2,4-Trimethylbenzene	DoD-ELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,CALAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,CALAP
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,CALAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,CALAP
4-Isopropyl Toluene	DoD-ELAP,CALAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,4-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,CALAP
n-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,CALAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE

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Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,CALAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,CALAP
Naphthalene	DoD-ELAP,ADEC,CALAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,CALAP
Naphthalene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,CALAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,CALAP
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,CALAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,CALAP
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
n-Hexane	WADOE
n-Hexane	WADOE
n-Hexane	
n-Hexane	WADOE
2-Pentanone	WADOE
2-Pentanone	WADOE
2-Pentanone	
2-Pentanone	WADOE

NWTPH-HCID in Water

Gasoline Range Organics (Tol-C12)	DoD-ELAP,WADOE
Gasoline Range Organics (Tol-C12)	NELAP,DoD-ELAP
Gasoline Range Organics (Tol-C12)	NELAP,DoD-ELAP,WADOE
Gasoline Range Organics (Tol-C12)	NELAP,DoD-ELAP,WADOE
Diesel Range Organics (C12-C24)	DoD-ELAP,WADOE
Diesel Range Organics (C12-C24)	NELAP,DoD-ELAP
Diesel Range Organics (C12-C24)	NELAP,DoD-ELAP,WADOE
Diesel Range Organics (C12-C24)	NELAP,DoD-ELAP,WADOE
Motor Oil Range Organics (C24-C38)	NELAP,DoD-ELAP,WADOE
Motor Oil Range Organics (C24-C38)	DoD-ELAP,WADOE
Motor Oil Range Organics (C24-C38)	NELAP,DoD-ELAP,WADOE

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Motor Oil Range Organics (C24-C38) NELAP,DoD-ELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021

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Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
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.

APPENDIX B

Sample Integrity Data Sheets (SIDS)

First Round

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-2- 0920 LMW-2-0920-D

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 9/16/20 **Time** 1458/1503 (DUP)

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.)

SWL: 8.31 @ 0853 ft BTOC (monument at elev. X) (bottom at 38.1 ft bgs, 4-in casing)

Screened Interval: 27.9 – 38.1 ft bgs Monument: 2.94 ags

Sand Pack Interval: 24.8-38.1 ft bgs (8-in hole) (~7.8 gal/sand pack vol)

Packer Depth – NA (~22.3 gal/casing vol) (~30.1 gal/total well vol)

Sample Description Extra volume collected for MS/MSD

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
9-40 mL	VOA	VOA vial	HCl
12-500 mL, 6-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl
6-500mL	1,4-Dioxane	Glass amber	None

Sampler (signature) _____ **Date** 9/18/20

Supervisor (signature) _____ **Date** 9-25-20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-2- 0920
Date 9/16/20
Time Begin Purge 1428
Time Collect Sample 1458/1503

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
8.31	1433	11.6	7.04	754	0.12	-45.7	1.27
8.31	1438	11.9	6.93	761	0.06	-58.9	0.13
8.31	1443	11.9	6.91	761	0.02	-61.9	0.31
8.31	1448	12.0	6.90	761	0.01	-60.5	0.19
—	1458	Sample	—	—	—	—	—
—	1503	Duplicate Sample	—	—	—	—	—

Comments:

Grundfos: ~80 Hz

Flow Rate: gpm
800mL/min

Sampler's Initials JH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-3-0920

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 9/18/20 **Time** 0850

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.)

SWL: 12.98 ft @ 0814 9/18/20 ft BTOC (monument at elev. X) (bottom at 64.8 ft bgs, 4-in casing)

Screened Interval: 49.8 – 64.8 ft bgs Monument: 3.08 ags

Sand Pack Interval: 47.1-64.8 ft bgs (8-in hole) (~10.4 gal/sand pack vol)

Packer Depth – 39.33 ft bgs (~36.1 gal/casing vol) (~16.6 gal/packer casing volume)

(~27.0 gal/total well vol below packer)

Sample Description clear, no odor ~~sample~~ smell

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) _____ **Date** 9/18/20

Supervisor (signature) _____ **Date** 9-25-20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-3- 6920
Date ~~9/~~ 9/18/20
Time Begin Purge 0827
Time Collect Sample 0850

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
12.50	0832	11.6	7.61	238.4	0.53	187.1	0.28
12.48	0837	11.6	7.47	239.6	0.21	182.1	0.12
12.45	0842	11.6	7.47	240.5	0.14	174.1	0.18
12.44	0847	11.6	7.49	240.3	0.09	163.1	0.17
	0850 - collect sample						

Comments:

Grundfos: ~135 Hz
Packer: 130 psi

Flow Rate: ~~gpm~~
1900 mL/min

Sampler's Initials TH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-4- 0920

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 9/16/20 **Time** 1635

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.)

SWL: 10.45 @1600 ft BTOC (monument at elev. X) (bottom at 209.7 ft bgs, 4-in. casing)

Screened Interval: 195-209.7 ft bgs Monument: 2.76 ags

Sand Pack Interval: 189-209.7 ft bgs (8-in hole) (~12.3 gal/sand pack vol)

Packer Depth – 187.3 ft bgs (~133.3 gal/casing vol) (~14.6 gal/packer casing volume)

(~26.9 gal/total well vol below packer)

** Depths corrected for 70° inclination

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl
2-500mL	1,4-Dioxane	Glass amber	None

Sampler (signature) _____ **Date** 9/18/20

Supervisor (signature) _____ **Date** 9-25-20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-4- 0920
Date 9/16/20
Time Begin Purge 1605
Time Collect Sample 1635

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
10.46	1610	11.8	7.41	~~750~~ 759	0.24	13.5	0.13
10.45	1615	11.7	7.15	753	0.13	-14.6	0.11
10.44	1620	11.7	7.04	753	0.07	-23.1	0.26
10.44	1625	11.6	7.00	753	0.04	-28.1	0.21
10.45	1630	11.7	6.98	755	0.03	-31.7	0.51
—	1635	Sample	—	—	—	—	—

Comments:

Grundfos: 80 Hz
Packer: 110 psi

Flow Rate: gpm
500mL/min

Sampler's Initials TH/TD

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-5- 0920

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 9/18/20 **Time** 0949

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.)

SWL: 14.54 ft @0917 9/18/20 ft BTOC (monument at elev. X) (bottom at 241.8 ft bgs, 4-in casing)

Screened Interval: 231.8-241.8 ft bgs Monument: 3.24 ags

Sand Pack Interval: 231.8-241.8 ft bgs (8-in hole) (~5.9 gal/sand pack vol)

Packer Depth – 222.11 ft bgs (~150.8 gal/casing vol) (~12.9 gal/packer casing volume)

(~18.7 gal/total well vol below packer)

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) _____ **Date** 9/18/20

Supervisor (signature) _____ **Date** 9.25.20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-5-0520
Date 9/18/20
Time Begin Purge 0919
Time Collect Sample 0949

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
14.53	0924	10.8	6.95	546	0.13	-41.1	0.92
14.53	0929	11.0	6.87	541	0.05	-58.8	0.16
14.53	0934	11.1	6.85	542	0.02	-68.8	0.14
14.54	0939	11.1	6.84	542	0.00	-74.3	0.19
14.54	0944	11.1	6.84	542	0.00	-76.5	0.24
	0949						

Comments:

Grundfos: ~135 Hz
Packer: 110 psi

Flow Rate: ~~gpm~~
1700 mL/min

Sampler's Initials JH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-6-0920

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 9/17/20 **Time** 0840

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.)

SWL: 40.85 ft BTOC (monument at elev. X) (bottom at 105.9 ft bgs, 4-in casing)

Screened Interval: 90.9-105.9 ft bgs Monument: 3.05 ags

Sand Pack Interval: 82.5-105.9 ft bgs (8-in hole) (~13.7 gal/sand pack vol)

Packer Depth – 81.22 ft bgs (~53 gal/casing vol) (~16.1 gal/packer casing volume)

(~29.9 gal/total well vol below packer)

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) _____ **Date** 9/18/20

Supervisor (signature) _____ **Date** 9-25-20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-6- 0920
Date 9/17/20
Time Begin Purge 0810
Time Collect Sample 0840

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
40.85	0815	9.7	6.96	200.5	0.48	61.2	12.9
40.85	0820	10.1	6.63	197.2	0.21	3.0	3.17
40.85	0825	10.3	6.56	196.7	0.14	-13.8	8.47
40.85	0830	10.4	6.54	196.8	0.11	-21.9	1.46
40.85	0835	10.4	6.56	196.7	0.10	-27.1	2.32
—	0840	Sample	—	—	—	—	—

Comments:

Grundfos: 180 Hz
Packer: 110 psi

Flow Rate: gpm
1,900 mL/min

Sampler's Initials TH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-7-0920

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 9/17/20 **Time** 1345

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.)

SWL: 227.68 ft @ 1249 9/17/20 ft BTOC (monument at elev. X) (bottom at 253.7 ft bgs, 4-in casing)

Screened Interval: 239.6-253.7 ft bgs Monument: 3.09 ags

Sand Pack Interval: NA

Packer Depth – NA (~28.3 gal/casing vol) **Depths corrected for 70° inclination

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) _____ **Date** 9/18/20

Supervisor (signature) _____ **Date** 9-25-20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-7- 0920
Date 9/17/20
Time Begin Purge 1252
Time Collect Sample 1345

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
227.70	1257	10.9	7.54	359.5	0.45	13.3	10.8
227.76	1302	12.2	7.51	371.3	0.69	10.1	6.43
* —	1307	14.2	7.50	390.9	0.62	5.1	4.18
—	1312	14.8	7.50	397.4	0.52	1.8	3.23
—	1317	15.1	7.49	400.1	0.44	-3.9	2.75
—	1322	15.2	7.48	401.3	0.39	-34.9	2.19
—	1327	15.2	7.48	402.6	0.35	-61.4	1.89
—	1332	15.3	7.48	403.8	0.32	-73.9	2.05
—	1337	15.4	7.48	405.5	0.30	-84.6	1.62
—	1342	15.5	7.48	409.3	0.27	-94.8	1.80
	1345 - collect sample						

Comments:

Grundfos: ~~320 Hz~~ 337 Hz

* WL meter hung up @ 1307

Flow Rate: ~~gpm~~
1100 mL/min

Sampler's Initials TH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-8- 0820

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 9/18/20 **Time** 1100

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.)

SWL: 5.16 ft @ 1031 9/18 ft BTOC (monument at elev. X) (bottom at 13 ft bgs, 2-in casing)

Screened Interval: 8–13 ft bgs PVC stickup: 1.72 ags

Sand Pack Interval: 6-13 ft bgs (8-in hole) (~5.1 gal/sand pack vol)

Packer Depth –NA (~1.9 gal/casing vol) (~7 gal/total well volume)

Sample Description clear, no odor ~~sheen~~

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) _____ **Date** 9/18/20

Supervisor (signature) _____ **Date** 9-25-20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-8-0520
Date 9/18/20
Time Begin Purge 1036
Time Collect Sample 1160

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
6.50	1041	13.8	6.85	521	0.56	-97.0	1.77
7.05	1046	13.8	6.83	461.4	0.29	-108.1	3.35
7.20	1051	13.8	6.83	475.9	0.19	-110.8	2.39
7.21	1056	14.0	6.82	498.7	0.14	-111.2	1.91
	1100 - collect sample						

Comments:

Flow Rate: 200 mL/min

Sampler's Initials JH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-9-0920

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 9/17/20 **Time** 1503

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.)

SWL: 100.25 ft @ 1431 9/17/20 ft BTOC (monument at elev. X) (bottom at 159 ft bgs, 2-in casing)

Screened Interval: 149 – 159 ft bgs PVC stickup: 2.86 ags

Sand Pack Interval: 143.5-159 ft bgs (8-in hole) (~11.4 gal/sand pack vol)

Packer Depth – NA (~10.2 gal/casing vol) (~21.6 gal/total well volume)

Sample Description Clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) _____ **Date** 9/18/20

Supervisor (signature) _____ **Date** 9-25-20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-9-0920
Date 9/17/20
Time Begin Purge 1434
Time Collect Sample 1503

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
100.29	1439	11.1	7.37	525	0.82	-32.2	2.11
100.25	1444	11.1	7.15	523	0.42	-55.2	0.85
100.27	1449	11.1	7.09	522	0.29	-63.6	0.29
100.29	1454	11.1	7.05	523	0.22	-69.4	0.20
100.27	1459	11.0	7.04	522	0.17	-72.9	0.17
	1503	collect sample					

Comments:

Tank: 130
Throttle: 95
CPM: 2
CID: 51

Flow Rate: 500 mL/min

Sampler's Initials TH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-10- 0920

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 9/16/20 **Time** 1119

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.)

SWL: 0.68 @ 1042 ft BTOC (monument at elev. X) (bottom at 289 ft bgs, 4-in casing)

Screened Interval: 267-289 ft bgs PVC Stickup: 3.12 ags

Sand Pack Interval: 258-289 ft bgs (9-in hole) (~18.2 gal/sand pack vol)

Packer Depth –NA (~191 gal/casing vol) (~209 gal/total well vol)

Sample Description Clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl
2-500mL	1,4-Dioxane	Glass amber	None

Sampler (signature) _____ **Date** 9/16/20

Supervisor (signature) _____ **Date** 9-25-20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-10- 0920
Date 9/16/20
Time Begin Purge 1047
Time Collect Sample 1119

~~Water Level~~ Time feet bmp	~~Time~~ WL	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
1052	1.63	11.5	8.24	276.3	0.16	-36.8	0.11
1057	2.41	11.4	8.25	276.0	0.04	-79.9	0.41
1102	2.96	11.5	8.22	276.2	0.03	-110.1	0.34
1107	3.26	11.4	8.29	276.2	0.02	-125.7	0.28
1112	3.83	11.5	8.30	276.6	0.00	-150.0	0.45
1117	4.40	11.5	8.32	276.7	0.00	-165.5	0.31
	1119 collect sample						

Comments:
Tank: 110
Throttle: 40
CPM: 2
CID: 50

Flow Rate: 400 mL/min

Sampler's Initials TH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-11- 0920

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 9/17/20 **Time** 0945

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.)

SWL: 158.00 ft BTOC (monument at elev. X) (bottom at 707 ft bgs, 4-in casing)

Screened Interval: 696-707 ft bgs PVC Stickup: 2.70 ags

Sand Pack Interval: 688-707 ft bgs (8-in hole) (~11.2 gal/sand pack vol)

Packer Depth –NA (~360.4 gal/casing vol) (~371.6 gal/total well vol)

Sample Description Clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) _____ **Date** 9/18/20

Supervisor (signature) _____ **Date** 9-25-20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-11-0920
Date 9/17/20
Time Begin Purge 0913
Time Collect Sample 0945

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
158.00	0918	10.7	7.40	399.9	3.70	-5.4	1.45
158.00	0923	10.4	7.14	410.4	1.24	-36.7	1.74
158.00	0928	10.4	7.09	411.9	0.78	-50.0	1.24
158.01	0933	10.3	7.07	411.6	0.52	-63.7	0.78
158.01	0938	10.4	7.08	411.9	0.44	-72.0	1.17
158.01	0943	10.4	7.09	411.6	0.37	-78.6	0.66
	0945 –	collect samples					

Comments:

Tank: 130
Throttle: 110
CPM: 1
CID: 15

Flow Rate: 400 mL/min

Sampler's Initials TH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-12-0920

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 9/16/20 **Time** 1245

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.)

SWL: 12.16 @ 1205

Screened Interval: 15-25 ft

Sand Pack Interval: 11-25 ft

Packer Depth – NA

Sample Description Clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl
2-500mL	1,4-Dioxane	Glass amber	N/A

Sampler (signature) _____ **Date** 9/16/20

Supervisor (signature) _____ **Date** 9-25-20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-12- 6920
Date 9/16/20
Time Begin Purge 1211
Time Collect Sample 1245

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
12.16	1216	11.7	6.90	549	0.35	-58.4	23.7
12.16	1221	11.5	6.60	559	0.21	-68.0	15.0
12.16	1226	11.4	6.58	570	0.15	-73.5	10.4
12.16	1231	11.4	6.62	595	0.12	-76.1	14.3
12.16	1236	11.3	6.64	609	0.14	-77.2	7.95
12.16	1241	11.4	6.67	615	0.14	-81.0	6.05
	1245	Collect	sample				

Comments:

Tank: 110
Throttle: 20
CPM: 2
CID: 47

Flow Rate: 350 mL/min

Sampler's Initials TH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-13R-0920

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 9/16/20 **Time** 1343

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.)

SWL: 12.68 @ 1311

Screened Interval: 115-140 ft

Sand Pack Interval: 110-150 ft

Packer Depth – NA

Sample Description Clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl
2-500mL	1,4-Dioxane	Glass amber	None

Sampler (signature) _____ **Date** 9/18/20

Supervisor (signature) _____ **Date** 9-25-20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-13R- 0920
Date 9/16/20
Time Begin Purge 1313
Time Collect Sample 1343

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
12.85	1318	12.0	7.22	705	0.55	-77.6	0.76
12.87	1323	11.9	7.26	701	0.16	-103.5	0.81
12.86	1328	11.9	7.28	701	0.08	-116.6	0.48
12.79	1333	12.1	7.31	704	0.04	-125.2	0.61
12.85	1338	11.7	7.31	697	0.03	-130.2	0.56
—	1343	Sample	—	—	—	—	—

Comments:

Tank: 110
Throttle: 35
CPM: 2
CID: 48

Flow Rate: 300 mL/min

Sampler's Initials TH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-14-0920

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 9/17/20 **Time** 1200

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.)

SWL: 166.52 ft @ 1126 9/17/20

Screened Interval: 156.5-172.3 ft bgs PVC Stickup: 2.9 ft ags

Sand Pack Interval: 152.5-175.8 ft bgs

Packer Depth –NA **Depths corrected for 75°inclination

Sample Description Clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) _____ **Date** 9/18/20

Supervisor (signature) _____ **Date** 9-25-20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-14- 0920
Date ~~9/20/~~ 9/17/20
Time Begin Purge 1128
Time Collect Sample 1200

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
167.06	1133	11.6	6.80	974	0.42	-10.5	8.69
167.07	1138	11.5	6.71	918	0.22	-35.9	6.82
167.08	1143	11.4	6.67	892	0.12	-43.3	6.51
167.07	1148	11.3	6.65	884	0.11	-48.9	7.48
167.07	1153	11.3	6.64	880	0.08	-51.7	8.87
	1200 - collect sample						8.61

Comments:

Tank: 140
Throttle: 115
CPM: 2
CID: 49

Flow Rate: 450 mL/min

Sampler's Initials TH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-15- 0920

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 9/17/20 **Time** 1045

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.)

SWL: 152.19 @ 10:13 9/17/20

Screened Interval: 235-245 ft

Sand Pack Interval: 231-245 ft

Packer Depth – NA

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) _____ **Date** 9/17/20

Supervisor (signature) _____ **Date** 9-25-20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-15- 0920
Date 9/17/20
Time Begin Purge 1015
Time Collect Sample 1045

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
152.38	1020	10.5	7.38	368.7	2.10	-84.2	8.33
152.20	1025	10.3	7.32	363.8	0.89	-116.5	4.47
152.15	1030	10.2	7.35	366.8	0.55	-130.3	2.39
152.22	1035	10.2	7.37	368.3	0.45	-134.9	2.82
152.18	1040	10.2	7.39	369.0	0.35	-138.4	2.71
	1045 - collect sample						

Comments:

Tank: 130
Throttle: 95
CPM: 2
CID: 53

Flow Rate: 350 mL/min

Sampler's Initials TH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-FB- 0920.

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 9/16/20 **Time** 1530

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.)

SWL: NA

Sample Description Lab provided DI and VOC free DI water

Direct pour

Field Measurements on Sample (pH, conductivity, etc.)

No field measurements.

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl
2-500mL	1,4-Dioxane	Glass amber	NaHSO4

Sampler (signature) _____ **Date** 9/18/20

Supervisor (signature) _____ **Date** 9-25-20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-FB-0920
Date 9/16/20
Time Begin Purge –
Time Collect Sample ~~1530~~ 1530

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU

Comments:

Sampler's Initials JK

Second Round

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

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 ~~9/28/2020~~ **Time** ~~1001~~

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.)

SWL: ~~7.88~~ @ 9/28/2020 1001 ft BTOC (monument at elev. X) (bottom at 38.1 ft bgs, 4-in casing)

Screened Interval: 27.9 – 38.1 ft bgs Monument: 2.94 ags

Sand Pack Interval: 24.8-38.1 ft bgs (8-in hole) (~7.8 gal/sand pack vol)

Packer Depth – NA (~22.3 gal/casing vol) (~30.1 gal/total well vol)

Sample Description ~~Extra volume collected for MS/MSD~~

~~X~~ No samples collected, parameters only

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
9-40 mL	VOA	VOA vial	HCl
12-500 mL, 6-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) [signature] **Date** 9/28/2020

Supervisor (signature) [signature] **Date** 9/29/2020

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-2-
Date 9/28/20
Time Begin Purge 1004
~~Time Collect Sample~~

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
7.87	1007	10.7	6.41	632	0.74	-116.1	1.40
7.87	1010	11.0	6.42	654	0.68	-123.3	0.61
7.88	1013	11.1	6.45	653	0.63	-128.1	0.54
7.88	1016	11.2	6.47	650	0.60	-131.8	0.29
7.89	1019	11.2	6.48	652	0.58	-133.1	0.45

Comments:

Grundfos: ~80 Hz

Flow Rate: 840 mL/min ~~gpm~~

Sampler's Initials TD

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

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 ~~9/29/20~~ **Time** ~~0956~~ TD

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.)

SWL: 12.56 @ 0956 9/29/2020 ft BTOC (monument at elev. X) (bottom at 64.8 ft bgs, 4-in casing)

Screened Interval: 49.8 – 64.8 ft bgs Monument: 3.08 ags

Sand Pack Interval: 47.1-64.8 ft bgs (8-in hole) (~10.4 gal/sand pack vol)

Packer Depth – 39.33 ft bgs (~36.1 gal/casing vol) (~16.6 gal/packer casing volume)

(~27.0 gal/total well vol below packer)

Sample Description * No Samples collected, parameters only.

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) Jim Dogan **Date** 9/29/2020

Supervisor (signature) **Date** 9/29/2020

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-3-
Date 9/29/2021
Time Begin Purge 0958
~~Time Collect Sample~~

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
12.55	1001	11.1	7.34	212.3	0.75	97.0	0.39
12.55	1004	11.1	7.38	216.4	0.69	95.7	0.24
12.55	1007	11.1	7.38	210.8	0.66	94.6	0.33
12.55	1010	11.1	7.38	207.2	0.63	87.5	0.28

Comments:

Grundfos: ~135 Hz
Packer: 130 psi

Flow Rate: ~~gpm~~ 2,700mL/min

Sampler's Initials TD

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

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 ~~9/28/20~~ **Time** ~~1055~~

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.)

SWL: 9.97 @ 9/29/2020 1415 ft BTOC (monument at elev. X) (bottom at 209.7 ft bgs, 4-in. casing)

Screened Interval: 195-209.7 ft bgs Monument: 2.76 ags

Sand Pack Interval: 189-209.7 ft bgs (8-in hole) (~12.3 gal/sand pack vol)

Packer Depth – 187.3 ft bgs (~133.3 gal/casing vol) (~14.6 gal/packer casing volume)

(~26.9 gal/total well vol below packer)

** Depths corrected for 70° inclination

Sample Description *No Samples collected, parameters only.

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) [signature] **Date** 9/28/2020

Supervisor (signature) [signature] **Date** 9/29/2020

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-4
Date 9/22/20
Time Begin Purge 1055
~~Time Collect Sample~~

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
9.97	1058	10.9	6.92	640	1.44	-121.7	0.35
9.97	1101	10.7	6.80	637	0.77	-121.5	0.25
9.97	1104	10.6	6.76	635	0.69	-137.0	0.31
9.97	1107	10.7	6.73	627	0.65	-141.6	0.21
9.97	1110	10.7	6.71	630	0.62	-142.9	0.21

Comments:

Grundfos: 80 Hz
Packer: 110 psi

Flow Rate: gpm
720 mL/min

Sampler's Initials TD

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

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 ~~9/29/20~~ **Time** ~~1038~~

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.)

SWL: 14.58 @ 1038 9/29/20 ft BTOC (monument at elev. X) (bottom at 241.8 ft bgs, 4-in casing)

Screened Interval: 231.8-241.8 ft bgs Monument: 3.24 ags

Sand Pack Interval: 231.8-241.8 ft bgs (8-in hole) (~5.9 gal/sand pack vol)

Packer Depth – 222.11 ft bgs (~150.8 gal/casing vol) (~12.9 gal/packer casing volume)

(~18.7 gal/total well vol below packer)

Sample Description No Samples collected, parameters only.

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) [signature] **Date** 9/29/2020

Supervisor (signature) [signature] **Date** 9/29/2020

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-5-
Date 9/27/10
Time Begin Purge 1032
~~Time Collect Sample~~

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
14.58	1035	10.3	6.71	460.3	0.78	-27.9	0.78
14.58	1038	10.5	6.65	459.4	0.66	-34.0	0.23
14.58	1041	10.6	6.64	447.8	0.62	-38.1	0.14
14.58	1044	10.6	6.64	445.3	0.60	-41.3	0.25

Comments:

Grundfos: ~135 Hz
Packer: 110 psi

Flow Rate: ~~gpm~~ 2,400 mL/min

Sampler's Initials TD

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

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 ~~9/28/20~~ **Time** ~~1405~~

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.)

SWL: 41.90 @ 9/28/2020 1403 ft BTOC (monument at elev. X) (bottom at 105.9 ft bgs, 4-in casing)

Screened Interval: 90.9-105.9 ft bgs Monument: 3.05 ags

Sand Pack Interval: 82.5-105.9 ft bgs (8-in hole) (~13.7 gal/sand pack vol)

Packer Depth – 81.22 ft bgs (~53 gal/casing vol) (~16.1 gal/packer casing volume)

(~29.9 gal/total well vol below packer)

Sample Description ☆ No Samples collected, parameters only.

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) [signature] **Date** 9/28/2020

Supervisor (signature) [signature] **Date** 9/29/2020

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-6
Date 9/23/20
Time Begin Purge 1405
Time Collect Sample

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
41.56	1408	9.4	7.03	170.2	0.92	-83.3	4.04
41.55	1411	9.7	6.92	169.6	0.77	-82.3	2.61
41.56	1414	9.9	6.84	161.5	0.69	-81.2	1.90
41.56	1417	10.0	6.78	163.3	0.66	-80.4	1.95
41.57	1420	10.0	6.75	159.2	0.64	-79.7	1.42

Comments:

Grundfos: 180 Hz
Packer: 110 psi

Flow Rate: ~~gpm~~
2,550 mL/min

Sampler's Initials TD

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

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 ~~4/28/20~~ 4/29/20 **Time** ~~1219~~

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.)

SWL: 228.08 @ 9/29/2020 1331 ft BTOC (monument at elev. X) (bottom at 253.7 ft bgs, 4-in casing)

Screened Interval: 239.6-253.7 ft bgs Monument: 3.09 ags

Sand Pack Interval: NA

Packer Depth – NA (~28.3 gal/casing vol) **Depths corrected for 70° inclination

Sample Description ☆ No Samples collected, parameters only

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) [signature] **Date** 9/29/2020

Supervisor (signature) [signature] **Date** 9/29/2020

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-7-
Date 9/25/20
Time Begin Purge ~~1750~~ 1223
~~Time Collect Sample~~

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
228.1	1226	10.9	7.23	313.8	1.18	68.5	9.41
228.1	1229	11.3	7.21	310.7	1.50	5.2	5.07
228.1	1232	13.2	7.14	327.4	1.12	-50.5	2.17
228.1	1235	13.6	7.16	342.8	0.97	-70.6	2.40
228.1	1238	13.9	7.16	354.6	0.88	-77.3	2.12
228.1	1241	13.9	7.16	361.3	0.84	-79.4	1.52
228.1	1244	13.9	7.15	376.5	0.82	-80.1	1.08

Comments:
340
Grundfos: ~~320~~ Hz

Flow Rate: 2200 gpm mL/min

Sampler's Initials TD

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

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 ~~9/29/20~~ **Time** ~~1114~~

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.)

SWL: ~~4.91~~ 5.89 @ 1355 (9/29/2020) ft BTOC (monument at elev. X) (bottom at 13 ft bgs, 2-in casing)

Screened Interval: 8–13 ft bgs PVC stickup: 1.72 ags

Sand Pack Interval: 6-13 ft bgs (8-in hole) (~5.1 gal/sand pack vol)

Packer Depth –NA (~1.9 gal/casing vol) (~7 gal/total well volume)

Sample Description ~~X~~ No Samples collected, parameters only

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) [signature] **Date** 9/29/2020

Supervisor (signature) [signature] **Date** 9/29/2020

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-8-
Date 9/29/20
Time Begin Purge 1115
~~Time Collect Sample~~

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
6.41	1118	13.4	6.69	462.8	0.89	-88.5	0.73
6.87	1121	13.5	6.67	450.3	0.97	-90.4	0.77
7.13	1124	13.5	6.66	447.9	0.67	-91.9	TD ~~0.41~~ 0.63
7.34	1127	13.6	6.66	443.6	0.62	-94.4	0.68
7.49	1130	13.6	6.67	440.1	0.59	-95.3	0.71

Comments:

Flow Rate: 250 mL/min

Sampler's Initials TD

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

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 ~~9/29/20~~ **Time** ~~0915~~

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.)

SWL: 100.40 @ 1342 9/29/2020 ft BTOC (monument at elev. X) (bottom at 159 ft bgs, 2-in casing)

Screened Interval: 149 – 159 ft bgs PVC stickup: 2.86 ags

Sand Pack Interval: 143.5-159 ft bgs (8-in hole) (~11.4 gal/sand pack vol)

Packer Depth – NA (~10.2 gal/casing vol) (~21.6 gal/total well volume)

Sample Description NO Samples Collected, Parameters only.

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) [signature] **Date** 9/29/2020

Supervisor (signature) [signature] **Date** 9/29/2020

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-9-
Date 9/29/20
Time Begin Purge 0918
~~Time Collect Sample~~

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
100.45	0921	10.2	6.76	486.4	1.48	-8.1	1.76
100.45	0924	10.3	6.69	487.1	1.00	-22.7	0.97
100.45	0927	10.3	6.69	488.5	0.93	-28.4	0.79
100.45	0930	10.3	6.69	480.3	0.86	-33.4	0.72
100.45	0933	10.3	6.69	478.6	0.83	-35.5	0.69

Comments:

Tank: 130
Throttle: 95
CPM: 2
CID: 51
Flow Rate: ~~425~~ 600 mL/min

Sampler's Initials TD

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

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 ~~9/28/20~~ **Time** ~~1155~~

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.)

SWL: ~~0.05~~ 0.80 @ 1421 9/29/2020 ft BTOC (monument at elev. X) (bottom at 289 ft bgs, 4-in casing)

Screened Interval: 267-289 ft bgs PVC Stickup: 3.12 ags

Sand Pack Interval: 258-289 ft bgs (9-in hole) (~18.2 gal/sand pack vol)

Packer Depth –NA (~191 gal/casing vol) (~209 gal/total well vol)

Sample Description * No Samples collected, parameters only

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) Jim Doggett **Date** 9/28/2020

Supervisor (signature) [signature] **Date** 9/29/2020

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-10-
Date 9/28/20
Time Begin Purge 1155
~~Time Collect Sample~~

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
8.09	1158	11.4	8.53	225.8	0.90	-181.6	0.27
1.25	1201	11.2	8.51	227.3	0.67	-215.3	0.22
1.49	1204	11.2	8.50	222.4	0.63	-224.8	0.19
1.72	1207	11.2	8.50	218.7	0.60	-233.3	0.24
1.98	1210	11.2	8.50	219.3	0.59	-240.9	0.23

Comments:
Tank: 110
Throttle: 40
CPM: 2
CID: 50

Flow Rate: 300 mL/min

Sampler's Initials TD

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

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 ~~9/28/2020~~ **Time** ~~1515~~

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.)

SWL: 158.25 @ 9/29/2020 1512 ft BTOC (monument at elev. X) (bottom at 707 ft bgs, 4-in casing)

Screened Interval: 696-707 ft bgs PVC Stickup: 2.70 ags

Sand Pack Interval: 688-707 ft bgs (8-in hole) (~11.2 gal/sand pack vol)

Packer Depth –NA (~360.4 gal/casing vol) (~371.6 gal/total well vol)

Sample Description ☆ No Samples collected, parameters only

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) [signature] **Date** 9/28/2020

Supervisor (signature) [signature] **Date** 9/29/2020

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-11-
Date 9/28/20
Time Begin Purge 1618
Time Collect Sample [redacted]

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
158.15	1621	10.4	7.56	320.3	7.14	-67.3	1.61
158.15	1624	10.3	7.28	319.5	2.86	-92.2	0.47
158.16	1627	10.2	7.16	317.1	1.67	-92.1	0.48
158.16	1630	10.1	7.11	314.2	1.37	-93.8	0.33
158.16	1633	10.2	7.09	309.7	1.25	-95.1	0.27
158.16	1636	10.1	7.05	304.6	1.05	-98.2	0.22
158.16	1639	10.1	7.04	300.1	1.00	-99.5	0.30

Comments: Ants in Casing

Tank: 130
Throttle: 110
CPM: 1
CID: 15

Flow Rate: 375 mL/min

Sampler's Initials TD

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

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 ~~9/28/20~~ **Time** ~~1715~~

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.)

SWL: 10.98 @ 1426 9/29/2020

Screened Interval: 15-25 ft

Sand Pack Interval: 11-25 ft

Packer Depth – NA

Sample Description ☆ No Samples collected, parameters only

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) [signature] **Date** 9/28/2020

Supervisor (signature) [signature] **Date** 9/29/2020

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-12-
Date 9/28/20
Time Begin Purge 1253
~~Time Collect Sample~~

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
10.25	1256	11.4	6.51	340.5	0.79	-87.4	12.0
10.25	~~1256~~ 1259	11.2	6.43	335.8	0.70	-88.0	11.6
10.26	1302	11.2	6.39	328.1	0.63	-88.5	10.8
10.26	1305	11.2	6.38	326.3	0.60	-89.0	8.79
10.28	1307	11.2	6.37	321.7	0.59	-89.0	8.11
10.28	1310	11.2	6.37	319.2	0.58	-88.8	7.62

Comments:

Tank: 110
Throttle: 20
CPM: 2
CID: 47

Flow Rate: 300 mL/min

Sampler's Initials TD

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

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 ~~9/28/20~~ **Time** ~~1315~~

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.)

SWL: ~~10.87~~ 11.16 @ 1429 9/29/2020

Screened Interval: 115-140 ft

Sand Pack Interval: 110-150 ft

Packer Depth – NA

Sample Description ~~&~~ No Samples collected, parameters only

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) [signature] **Date** 9/28/2020

Supervisor (signature) [signature] **Date** 9/29/2020

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-13R-
Date 9/25/20
Time Begin Purge 1318
~~Time Collect Sample~~

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
10.91	1321	12.1	6.92	569	1.83	-115.4	1.03
10.90	1324	11.8	7.08	557	1.38	-121.6	0.40
10.92	1327	11.7	7.12	559	1.29	-126.7	0.45
10.93	1330	11.6	7.14	556	1.25	-128.7	0.26
10.93	1333	11.5	7.14	550	1.17	-131.0	0.34

Comments:

Tank: 110
Throttle: 35
CPM: 2
CID: 48

Flow Rate: 250 mL/min

Sampler's Initials TD

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

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 ~~9/28/20~~ **Time** ~~1507~~

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.)

SWL: 166.96 @ 1531 9/29/2020

Screened Interval: 156.5-172.3 ft bgs PVC Stickup: 2.9 ft ags

Sand Pack Interval: 152.5-175.8 ft bgs

Packer Depth –NA **Depths corrected for 75°inclination

Sample Description ~~X~~ No Samples collected, parameters only.

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) [signature] **Date** 9/28/2020

Supervisor (signature) [signature] **Date** 9/29/2020

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-14-
Date 9/28/20
Time Begin Purge ~~1507 1509~~ 1510
~~Time Collect Sample~~

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
167.07	1513	12.1	7.31	680	1.50	-41.8	3.50
167.07	1516	11.6	6.74	705	0.76	-77.2	6.60
167.07	1519	11.5	6.65	701	0.69	-81.4	6.75
167.07	1521	11.3	6.60	704	0.65	-82.4	5.71
167.08	1524	11.3	6.56	711	0.61	-82.8	4.44
167.08	1527	11.2	6.54	702	0.60	-83.2	4.36

Comments:

Tank: 140
Throttle: 115
CPM: 2
CID: 49

Flow Rate: 350 mL/min

Sampler's Initials TD

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

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 ~~9/28/20~~ **Time** ~~1657~~

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.)

SWL: 152.33 @ 1523 9/29/2020

Screened Interval: 235-245 ft

Sand Pack Interval: 231-245 ft

Packer Depth – NA

Sample Description * No Samples collected, parameters only.

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) [signature] **Date** 9/28/20

Supervisor (signature) [signature] **Date** 9/29/2020

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-15-
Date 9/28
Time Begin Purge 1700
~~Time Collect Sample~~

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
152.35	1703	10.2	7.26	292.6	3.11	-134.9	3.65
152.35	1706	10.0	7.31	285.3	1.74	-149.0	2.31
152.35	1709	10.0	7.31	284.2	1.26	-153.8	1.97
152.35	1712	9.9	7.30	283.1	1.05	-157.7	1.32
152.36	1715	9.9	7.29	281.8	0.98	-158.3	1.44
152.36	1718	9.9	7.28	278.4	0.91	-159.4	1.07

Comments:

Tank: 130
Throttle: 95
CPM: 2
CID: 53

Flow Rate: 400 mL/min

Sampler's Initials TD