

**Port of Seattle
Lora Lake Apartments Site**

2025 Annual Compliance Monitoring Report



Prepared for

Port of Seattle
Aviation Environmental Programs
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2025 Annual Compliance Monitoring Report

This document was prepared for
The Port of Seattle
under the supervision of:



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Date: January 9, 2026

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List of Abbreviations

Abbreviation	Definition
ARL	Analytical Resources, LLC
Burien	City of Burien
CAP	Cleanup Action Plan
CD	Consent Decree
CMP	Compliance Monitoring Plan
CUL	Cleanup level
DMCA	1982 Dredged Material Containment Area
Ecology	Washington State Department of Ecology
Enthalpy	Enthalpy Analytical
µg/L	Micrograms per liter
pg/g	Picograms per gram
pg/L	Picograms per liter
Port	Port of Seattle

Abbreviation	Definition
SeaTac	City of SeaTac
Site	Lora Lake Apartments Site
TEQ	Toxic equivalent
USEPA	U.S. Environmental Protection Agency
WSDOT	Washington State Department of Transportation

1.0 Introduction

This Annual Compliance Monitoring Report was prepared by Floyd|Snider on behalf of the Port of Seattle (Port) to document the compliance monitoring events conducted in 2025 at the Lora Lake Apartments Site (Site) in Burien, Washington. Compliance monitoring activities were conducted in accordance with the 2015 Compliance Monitoring Plan (CMP), as revised and finalized in 2022 (Floyd|Snider 2022).

The objective of this report is to describe the compliance monitoring program activities performed from January through December 2025. This report includes the results from compliance monitoring activities, which comprise groundwater compliance monitoring, sediment cap confirmation monitoring, and wildlife barrier and cap performance inspections at the Site.

The first 5-year data evaluation for the Site was presented in the 2024 Annual Compliance Monitoring Report (Floyd|Snider 2025) and is summarized in Section 3.3.4 of this report. The data from the 2025 event will be used to supplement the evaluation conducted in the first 5-year data evaluation to confirm the effectiveness of the remedial action and that site-wide compliance with groundwater cleanup standards have been achieved for the Site.

1.1 BACKGROUND

1.1.1 Site Description

The Site is located at 15001 Des Moines Memorial Drive South in Burien, Washington, and straddles the boundary between the City of Burien (Burien) and City of SeaTac (SeaTac), Washington (refer to Figure 1.1). The Site, as defined by Washington Administrative Code 173-340-200, is made up of three areas: the Lora Lake Apartments Parcel, and areas within the Lora Lake Parcel and 1982 Dredged Material Containment Area (DMCA) where contamination has come to be located. Historical operations at the Lora Lake Apartments Parcel included barrel-washing and auto-wrecking operations, which, along with site regrading, led to soil and groundwater contamination throughout the Site. The Site is owned by the Port and is located within the security fencing for the Seattle-Tacoma International Airport except for the portion of the Lora Lake Apartments Parcel owned by the Washington State Department of Transportation (WSDOT), described below. Descriptions of the Site areas are as follows:

- The Lora Lake Apartments Parcel is located on the west side of Des Moines Memorial Drive in Burien and consists of approximately 8.3 acres of currently vacant land. A portion of the Lora Lake Apartments Parcel in the northeast corner was sold to WSDOT in May 2017 for the construction of State Route 518 off-ramp. This area is retained within the Site boundary although no longer owned by the Port. To the south of the Lora Lake Apartments Parcel is the former Seattle City Light Sunnydale Substation Parcel, which was purchased by the Port in 2011. Contamination has come to be located on a portion of the former Sunnydale Substation Parcel and this area therefore falls within the Site boundary.

- The Lora Lake Parcel is located on the east side of Des Moines Memorial Drive in SeaTac and consists of approximately 7.1 acres of land, including the former approximately 3-acre Lora Lake and a Port-constructed wetland habitat mitigation area.
- The DMCA is an approximately 2.75-acre area located adjacent to the Lora Lake Parcel, to the northeast. The DMCA was constructed in 1982 when King County dredged approximately 4 feet of Lora Lake sediments and placed the dredged material in a specifically constructed facility, now referred to as the DMCA.

The Port and the Washington State Department of Ecology (Ecology) entered a Consent Decree (CD) in September 2015 under the mutual objective of providing remedial action at the Site. The CD required the Port to perform a final cleanup action and associated compliance monitoring at the Site, as described in the Cleanup Action Plan (CAP; State of Washington 2015).

1.1.2 Remedial Actions Implemented

As described in the CAP, the remedial actions at the Site were determined for each parcel.

- The Lora Lake Apartments Parcel remedial actions taken include excavation of soils with a dioxin/furan toxic equivalent (TEQ) greater than 100 picograms per gram (pg/g), construction of a temporary clean soil cap, and future implementation of a constructed engineered surface to contain remaining soils with concentrations greater than the dioxin/furan TEQ cleanup level (CUL) of 13 pg/g at the time of future site redevelopment. The final engineered surface shall be installed by October 31, 2026, as approved by Ecology via email on September 8, 2021. The excavation and temporary clean soil cap were completed in 2018.
- The Lora Lake Parcel remedial actions taken include construction of a sand cap, followed by site restoration into an intermittent scrub/shrub wetland. The sand cap was completed in 2019, and the wetland restoration was completed in early 2020.
- DMCA remedial actions completed include construction of a wildlife barrier. Restrictive Covenants limiting future site uses have been implemented for all parcels to protect from contact with contamination remaining in place. Restrictive Covenants for the Lora Lake Apartments Parcel, Lora Lake Parcel, DMCA, and the former Sunnysdale Substation Parcel were filed with King County on January 28, 2022, after receipt of Ecology signatures. Compliance monitoring of the remedial actions is being conducted under the CMP (Floyd|Snider 2022).

1.1.3 Compliance Monitoring Requirements

In accordance with Washington Administrative Code 173-340-410, compliance monitoring of site groundwater is required to confirm that human health and the environment are adequately protected, the remedial action has achieved the cleanup standards, and the cleanup action remains protective after cleanup standards have been met.

The Ecology-approved CMP includes requirements for each of the Site's three parcels. Requirements for the Lora Lake Apartments Parcel include analysis of groundwater for arsenic, pentachlorophenol, and dioxins/furans, and four consecutive events with concentrations less than the established CULs throughout the monitoring network prior to termination of sampling. The CMP also includes annual inspections of the soil cap to identify and document general condition, as well as any areas of exposed underlying soil, loss of barrier material, or substantial plant growth that may impact the functionality of the cap. Once constructed, annual monitoring of the permanent cap (redeveloped surface) will also be required to ensure integrity of the cap.

The Lora Lake Parcel requirements include annual analysis of groundwater for arsenic and dioxins/furans. Groundwater data is subject to a 5-year data evaluation to assess appropriate monitoring frequency for the next 5 years, and subsequent 5-year data evaluations set the frequency for the following 5-year period. Additionally, as described in the CMP, sediment remedy compliance is also evaluated every 5 years through a statistical comparison of Lora Lake Parcel groundwater quality to site vicinity groundwater quality, for assessment of the sediment cap performance and containment of contamination in the now-contained subsurface sediment beneath the restored wetland. The first 5-year data evaluation and sediment remedy compliance evaluation was presented in the 2024 Annual Compliance Monitoring Report; recommendations for ongoing monitoring were included in this report as summarized in Sections 2.1.1 and 3.1.1.

Compliance monitoring requirements at the DMCA include annual wildlife barrier physical inspections to identify and document general conditions, as well as any areas of exposed underlying soil, loss of barrier material, or substantial plant growth that may impact the functionality of the wildlife barrier.

2.0 Lora Lake Apartments Parcel

2.1 COMPLIANCE MONITORING PLAN ACTIVITIES COMPLETED

2.1.1 Groundwater Monitoring Program

Compliance monitoring at the Lora Lake Apartments Parcel began in December 2018. Four consecutive quarters of groundwater samples with pentachlorophenol and dioxin/furan concentrations less than CULs were collected at MW-C1, MW-C2, and MW-C3 during the December 2018, March 2019, June 2019, and September 2019 monitoring events. With Ecology's approval, sampling for pentachlorophenol and dioxin/furan analysis was terminated after the September 2019 event. Sampling for dissolved arsenic continued in 2025 as discussed below.

Groundwater samples, as described in this report, were collected from the full monitoring network (MW-C1, MW-C2, MW-C3, and MW-C4) on March 30, 2020, and June 20, 2020. In August 2020, Floyd|Snider submitted the *Evaluation of Arsenic in Groundwater at the Lora Lake Apartments Site* memorandum (hereafter referred to as the Arsenic Evaluation Memorandum; Floyd|Snider 2020) to Ecology on behalf of the Port to describe outlier arsenic data trends observed at MW-C2 and propose a change in the monitoring approach.

As described in the Arsenic Evaluation Memorandum, seasonal exceedances of arsenic concentrations correlated with elevated pH and high groundwater table elevation, likely associated with the crushed concrete fill placed after the demolition of the Lora Lake Apartments buildings and excavation of underlying impacted soil. Even though this recycled concrete was placed above the historical high water table elevation it may be impacting pH and arsenic in groundwater during the wet season. Because the pattern observed at MW-C2 is unique to the location and not observed within the rest of the monitoring network, the Port requested termination of quarterly sampling of the full monitoring network. The Port proposed annual sampling of MW-C2 and downgradient location MW-C3 during the wet season to continue to confirm that elevated arsenic concentrations are not migrating off-site.

On September 21, 2020, Ecology approved the proposed approach of terminating quarterly sampling at the Lora Lake Apartments Parcel and coordinating annual sampling of MW-C2 and the downgradient location, MW-C3, concurrent with Lora Lake annual monitoring each spring (refer to Appendix A of the 2020 Annual Compliance Monitoring Report [Floyd|Snider 2021]).

In the 2024 Annual Compliance Monitoring Report, Floyd|Snider proposed the termination of groundwater compliance monitoring at the Lora Lake Apartments Parcel. The past 5 years of groundwater monitoring for arsenic confirms that the elevated arsenic concentrations detected at MW-C2 likely due to the placement of crushed concrete during the remedial action are isolated to MW-C2 and are not migrating off-site. At MW-C3, arsenic has consistently been detected at concentrations well below the CUL of 5 µg/L. On May 8, 2025, Ecology approved this request. However, Ecology approval was received after the 2025 annual compliance monitoring had been completed, therefore 2025 results are presented in this report. With the termination of

groundwater compliance monitoring at the Lora Lake Apartments Parcel, MW-C2 and MW-C3 will be decommissioned by the Port in 2026.

2.2 GROUNDWATER COMPLIANCE MONITORING SUMMARY

MW-C2 and MW-C3 were sampled on April 15, 2025. The groundwater monitoring network is presented in Figure 2.1.

Groundwater samples were collected using standard low-flow sampling methods. The collected samples were generally clear, with no apparent odor. Purge water was collected and placed in an on-site, labeled 55-gallon drum. All samples were submitted to Analytical Resources, LLC (ARL) under chain-of-custody procedures for analysis of arsenic. Groundwater sample collection forms for the event are included in Appendix A.

2.3 GROUNDWATER ANALYTICAL SUMMARY

This section summarizes the analytical results for arsenic. Analytical results are presented in Figure 2.1 and Table 2.1, and laboratory reports and data validation summaries are included in Appendix B.

2.3.1 Arsenic

In the sample collected from MW-C3, arsenic was detected at an estimated concentration of 0.14 micrograms per liter ($\mu\text{g/L}$), less than the CUL of 5 $\mu\text{g/L}$. The arsenic concentration in the sample collected from MW-C2 was 42 $\mu\text{g/L}$, exceeding the CUL.

The elevated arsenic concentration MW-C2 on April 15, 2025, is consistent with the trend observed between 2019 and 2024. The arsenic concentration at MW-C3 indicates that elevated arsenic concentrations are not migrating off-site.

2.3.2 Data Validation

A Compliance Screening (USEPA Stage 2B) data quality review was performed on metals data resulting from laboratory analysis by U.S. Environmental Protection Agency (USEPA) Methods 6020B. The analytical data were validated by Floyd|Snider in accordance with the USEPA *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA 2020).

Field and laboratory quality control parameters for all samples met project criteria. At some monitoring well locations, arsenic results were detected at concentrations less than the method reporting limit; these results were qualified by the laboratory as estimated concentrations. No additional qualifiers were added to the analytical results for metals based on the data quality review. Metals data are determined to be of acceptable quality for use as reported by the laboratory.

2.4 TEMPORARY SOIL CAP INSPECTION

On April 15, 2025, a cap inspection was conducted to document the integrity of the temporary soil cap that was installed at the Lora Lake Apartments Parcel in October 2017. The cap inspection was conducted in accordance with the CMP. During the cap inspection, the following item was noted for maintenance: areas in need of vegetation replacement surrounding the post-construction access road and along the southern property boundaries near the biofiltration swale due to potential burrowing insect activity and bird scavenging. The Port was notified of the damaged turf and is in the process of formalizing a pesticide application plan to combat further insect activity and disturbance. Appendix C includes field observations and photographs taken during the temporary soil cap inspection.

2.4.1 Maintenance Activities Completed

Instruction for required maintenance of the temporary soil cap was provided to the Port as part of required landscape operations and maintenance. Placement of topsoil and reseeding of areas where mowing activities had impacted the soil barrier during 2024 maintenance was conducted in March 2025. The Port formalized a reoccurring maintenance plan in 2025 that includes mowing every other month at the Lora Lake Apartments Parcel. Appendix D includes photographs of post-maintenance site conditions.

3.0 Lora Lake Parcel

3.1 COMPLIANCE MONITORING PLAN ACTIVITIES COMPLETED

3.1.1 Sediment Cap Confirmation Monitoring Program

Previously reported annual monitoring was completed at the Lora Lake Parcel in October 2020, March 2021, March 2022, April 2023, and April 2024. The sixth round of annual monitoring occurred on April 15 and 16, 2025, and is described in this report. The full confirmation monitoring network includes on-site well locations MW-CP1, MW-CP2, MW-CP3, MW-CP4, MW-CP5, MW-CP6, and MW-CP-7, as well as vicinity well locations MW-C1/VB1, MW-VB2, MW-VB3, and HCOO-B312 (Figure 3.1). In accordance with the CMP, on-site and vicinity well locations were sampled for arsenic and dioxins/furans.

In the 2024 Annual Compliance Monitoring Report, Floyd|Snider proposed the termination of sediment cap confirmation monitoring for dioxins/furans at the Lora Lake Parcel. Ecology approved this request on May 8, 2025, after the 2025 annual compliance monitoring had been completed. Therefore, 2025 results for dioxins/furans are presented in this report. Sample collection for dioxin/furan analysis will not be included in future Lora Lake Parcel compliance monitoring activities.

3.1.2 Maintenance Activities Completed

No maintenance actions were identified for the Lora Lake Parcel, and no maintenance activities were conducted during the year.

3.2 SEDIMENT CAP CONFIRMATION MONITORING SUMMARY

This section summarizes the sediment cap confirmation monitoring event at the Lora Lake Parcel in 2025. The monitoring network is presented in Figure 3.1, and the groundwater sample collection forms are in Appendix A.

The full confirmation monitoring network (MW-CP1, MW-CP2, MW-CP3, MW-CP4, MW-CP5, MW-CP6, MW-CP-7, MW-C1/VB1, MW-VB2, MW-VB3, and HCOO-B312) was sampled on April 15 and 16, 2025. Groundwater samples were collected using standard low-flow groundwater sampling methods. A duplicate sample was collected at MW-CP1 for laboratory quality control. Samples were generally clear with no visible turbidity and no apparent odor. Purge water was collected and placed in an on-site, labeled 55-gallon drum for future disposal by the Port. All samples were submitted to ARL under chain-of-custody procedures for analysis of arsenic and dioxins/furans.

3.3 GROUNDWATER ANALYTICAL SUMMARY

This section summarizes the analytical results for arsenic and dioxins/furans. Analytical results are presented in Figure 3.1 and Table 3.1, and laboratory reports and data validation summaries are included in Appendix B.

3.3.1 Arsenic

Arsenic concentrations in samples collected from all on-site wells and all vicinity wells were less than the CUL of 5 µg/L. The greatest arsenic concentration was observed at MW-CP5 with a concentration of 3.4 µg/L.

In 2024, an exceedance of the arsenic CUL was observed for the first time at the Lora Lake Parcel at MW-CP5. However, the MW-CP5 result from 2025 is consistent with the results at this location in all other monitoring years, where arsenic concentrations at MW-CP5 have ranged from 1.2 µg/L to 3.7 µg/L. The 2025 result implies that the exceedance in 2024 may have been an anomaly. Sediment cap confirmation monitoring for arsenic will continue for at least two more years, consistent with the recommendation in the 2024 Annual Compliance Monitoring Report, at which point the ongoing need for arsenic sampling will be evaluated.

3.3.2 Dioxins/Furans

The CUL for dioxin/furan TEQ is 6.7 picograms per liter (pg/L). Detected dioxin/furan TEQ concentrations were less than the CUL at all locations.

At MW-CP4, dioxin/furan TEQ was not detected but measured by ARL at 7.67 pg/L (1.1 times the CUL). This nondetect CUL exceedance is driven by elevated detection limits for the individual dioxin/furan congeners, which were 1.5 to 3.3 times greater than detection limits achieved in prior monitoring years. Because the dioxin/furan TEQ was calculated using one-half the detection limit for nondetect values, the calculated result is conservative and does not necessarily represent an exceedance—that is, if detection limits similar to prior monitoring years were used to calculate the dioxin/furan TEQ, the resulting concentration would not exceed the CUL. To confirm the magnitude of the nondetect result values, the MW-CP4 sample was sent to Enthalpy Analytical (Enthalpy) in El Dorado Hills, California, on October 21, 2025, to be reanalyzed for dioxins/furans. The nondetect values for individual congeners from Enthalpy ranged from 0.330 pg/L to 1.76 pg/L, and the resulting dioxin/furan TEQ concentration for MW-CP4 was an estimated nondetect concentration of 0.747 pg/L. This result does not exceed the CUL. Because this result is not impacted artificially by elevated detection limits, it has been selected for use in the dataset. The results analyzed by Enthalpy are presented in Table 3.1 and Figure 3.1 and used to calculate the statistics presented in Table 3.2.

3.3.3 Data Validation

A Compliance Screening (USEPA Stage 2B) data quality review was performed on metals data resulting from laboratory analysis by USEPA Method 6020B. The analytical data were validated by Floyd|Snider in accordance with the USEPA *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA 2020). A full data validation (USEPA Stage 4) was performed on dioxin/furan data resulting from laboratory analysis by USEPA Method 1613B. The dioxin/furan data were validated by EcoChem, Inc. EcoChem data validation reports are included in Appendix B.

Field and laboratory quality control parameters for samples met project criteria. All data are determined to be of acceptable quality for use as reported or qualified.

3.3.4 Sediment Cap Confirmation Monitoring

As detailed in the 2024 Annual Compliance Monitoring Report, a 5-year data evaluation was completed in 2024 at the Lora Lake Parcel to evaluate sediment cap performance through a statistical comparison of Lora Lake Parcel groundwater quality in the confirmation monitoring wells to site vicinity groundwater quality as measured in the site vicinity wells. The site vicinity background concentrations for arsenic and dioxin/furan TEQ are based on the 90th percentile of their respective datasets as calculated using the statistical software ProUCL (USEPA 2022). The site vicinity background concentrations for arsenic and dioxin/furan TEQ have been updated to include the 2025 data, with resulting background concentrations of 0.40 µg/L and 3.15 pg/L, respectively. Summary statistics for the arsenic and dioxin/furan TEQ datasets are presented in Table 3.2.

Over 50% of arsenic sediment cap confirmation monitoring results exceeded the site vicinity background concentration; however, an exceedance of the arsenic CUL has only been detected once, at MW-CP5 in 2024. As described in Section 3.1.1, sediment cap confirmation monitoring for arsenic will continue for at least two more years, consistent with the recommendation in the 2024 Annual Compliance Monitoring Report, at which point the ongoing need for arsenic monitoring will be evaluated.

For dioxin/furan TEQ, the sediment cap confirmation monitoring data continue to indicate that the sediment cap remedy has been effective. Dioxin/furan analysis will be terminated, consistent with the recommendation in the 2024 Annual Compliance Monitoring Report approved by Ecology.

4.0 1982 Dredged Material Containment Area

4.1 WILDLIFE BARRIER INSPECTION

The DMCA wildlife barrier was inspected on April 15, 2025. Dust and organic debris associated with a large deciduous tree were documented at the southwest corner (station DMCA 09) as well as a small area of moss growth at the northeast corner (station DMCA 04) of the DMCA area during the inspection. Overall, the general integrity and condition of the pervious pavement was in good condition. Signs of potential material loss at the surface previously noted at DMCA 05 during the 2023 inspection appeared stable and unchanged. Although the potential material loss does not appear to impact the barrier's ability to restrict contact with underlying soils, continued monitoring of this location is recommended. The wildlife barrier inspection log and photographs are included in Appendix C.

5.0 Upcoming Events and Next Steps

5.1 2026 COMPLIANCE MONITORING

Annual sediment cap confirmation monitoring at the Lora Lake Parcel for arsenic will continue with the seventh annual monitoring event in spring 2026.

The temporary soil cap at the Lora Lake Apartments Parcel and the wildlife barrier at the DMCA will be inspected concurrently with the annual sediment cap confirmation monitoring event.

5.2 LORA LAKE APARTMENTS PARCEL WELL DECOMMISSIONING

With Ecology approval, groundwater compliance monitoring at the Lora Lake Apartments Parcel has been terminated and the Port will decommission monitoring wells MW-C2 and MW-C3 in spring 2026. Groundwater monitoring of vicinity well MW-C1/VB1, located on the Lora Lake Apartments Parcel, will continue in 2026 in support of the Lora Lake Parcel sediment cap confirmation monitoring program.

6.0 References

- Floyd|Snider. 2020. *Evaluation of Arsenic in Groundwater at the Lora Lake Apartments Site*. Memorandum from Adia Jumper, Mark Jusayan, and Megan King, Floyd|Snider, to Sunny Becker, Washington State Department of Ecology. 17 August.
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Lora Lake Apartments Site
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Tables

Table 2.1
Lora Lake Apartments Parcel Groundwater Analytical Data

Location Name				MW-C1													
Sample ID				MW-C1-121218	MW-C1-121218-D	MW-C1-031519	MW-C1-031519-D	MW-C1-062119	MW-C1-062119-D	MW-C1-092019	MW-C1-092019-D	MW-C1-121819	MW-C1-121819-D	MW-C1-033020	MW-C1-033020-D	MW-C1-061720	MW-C1-061720D
Sample Date				12/12/2018	12/12/2018	3/15/2019	3/15/2019	6/21/2019	6/21/2019	9/20/2019	9/20/2019	12/18/2019	12/18/2019	3/30/2020	3/30/2020	6/17/2020	6/17/2020
Analyte	CAS No.	Site CUL	Units														
Field Parameters																	
Turbidity	--	--	NTU														
Dissolved Metals by USEPA 200.8																	
Arsenic	7440-38-2	5	µg/L	0.11 JQ	0.11 JQ	0.11 JQ	0.096 JQ	0.15 JQ	0.12 JQ	0.16 JQ	0.15 JQ	0.10 JQ	0.091 JQ	0.12 JQ	0.13 JQ	0.14 JQ	0.14 JQ
Phenols by USEPA 8041A																	
Pentachlorophenol	87-86-5	1	µg/L	0.025 U	0.025 U	0.025 U	0.025 U	0.025	0.025	0.025 U	0.025 U						
Dioxins/Furans by USEPA 1613B																	
2,3,7,8-TCDD	1746-01-6	--	pg/L	0.520 U	0.290 U	2.68 U	1.65 U	1.01 U	0.860 U	2.11 U	1.53 U						
1,2,3,7,8-PeCDD	40321-76-4	--	pg/L	0.490 U	0.350 U	3.25 U	1.64 U	1.02 U	0.990 U	1.17 U	1.48 U						
1,2,3,4,7,8-HxCDD	39227-28-6	--	pg/L	0.470 U	0.330 U	3.02 U	1.71 U	0.850 U	0.920 U	1.28 U	1.83 U						
1,2,3,6,7,8-HxCDD	57653-85-7	--	pg/L	0.430 U	0.320 U	2.95 U	1.72 U	0.790 U	0.860 U	1.11 U	1.68 U						
1,2,3,7,8,9-HxCDD	19408-74-3	--	pg/L	0.470 U	0.340 U	3.11 U	1.79 U	0.850 U	0.920 U	1.22 U	1.80 U						
1,2,3,4,6,7,8-HpCDD	35822-46-9	--	pg/L	1.48 U	0.980 U	11.0 U	2.11 UJ	1.54 UJ	1.24 UJ	2.04 U	1.60 U						
OCDD	3268-87-9	--	pg/L	3.37 J	5.71 J	148 J	9.90 J	4.65 UJ	5.59 UJ	7.48 UJ	15.5 U						
2,3,7,8-TCDF	51207-31-9	--	pg/L	0.380 U	0.340 U	2.64 U	1.67 U	1.32 U	1.10 U	1.95 U	1.45 U						
1,2,3,7,8-PeCDF	57117-41-6	--	pg/L	0.450 U	0.310 U	3.47 U	1.71 U	1.89 UJ	1.50 U	1.16 U	1.42 U						
2,3,4,7,8-PeCDF	57117-31-4	--	pg/L	0.410 U	0.280 U	3.14 U	1.53 U	1.43 U	1.24 U	0.930 U	1.15 U						
1,2,3,4,7,8-HxCDF	70648-26-9	--	pg/L	0.260 U	0.240 U	1.80 U	1.01 U	0.470 UJ	0.430 U	0.980 U	1.34 U						
1,2,3,6,7,8-HxCDF	57117-44-9	--	pg/L	0.260 U	0.250 U	1.86 U	1.01 U	0.500 UJ	0.450 UJ	0.960 U	1.42 U						
1,2,3,7,8,9-HxCDF	72918-21-9	--	pg/L	0.280 U	0.650 U	2.10 U	1.11 U	0.530 UJ	0.460 U	1.04 U	1.45 U						
2,3,4,6,7,8-HxCDF	60851-34-5	--	pg/L	0.260 U	0.240 U	1.66 U	0.960 U	0.450 UJ	0.410 UJ	0.980 U	1.34 U						
1,2,3,4,6,7,8-HpCDF	67562-39-4	--	pg/L	0.270 U	0.290 U	1.74 U	1.20 U	0.420 UJ	0.580 UJ	1.02 U	0.720 U						
1,2,3,4,7,8,9-HpCDF	55673-89-7	--	pg/L	0.370 U	0.250 U	2.36 U	1.70 UJ	0.600 UJ	0.860 UJ	1.69 U	1.06 U						
OCDF	39001-02-0	--	pg/L	1.22 UJ	0.860 UJ	11.2 UJ	4.23 UJ	1.53 UJ	1.99 UJ	2.65 UJ	2.15 U						
Dioxin/furan TEQ	--	6.7	pg/L	0.726 J	0.512 J	4.57 J	2.48 J	1.56 UJ	1.43 UJ	2.30 UJ	2.33 U						

Notes:
 Blank cells are intentional.
 -- Not available.
BOLD/RED Analyte detected at a concentration greater than the site CUL.
 1 In 2018, location MW-C4 was found to be filled with sand and was not sampled in December 2018, March 2019, or June 2019. After coordination with Ecology, this well was abandoned and a replacement well was installed within a few feet of the original well location in August 2019.

Abbreviations:
 CAS Chemical Abstracts Service
 CUL Cleanup level
 Ecology Washington State Department of Ecology
 HpCDD Heptachlorodibenzo-p-dioxin
 HpCDF Heptachlorodibenzofuran
 HxCDD Hexachlorodibenzo-p-dioxin
 HxCDF Hexachlorodibenzofuran
 µg/L Micrograms per liter
 NTU Nephelometric turbidity units
 OCDD Octachlorodibenzo-p-dioxin
 OCDF Octachlorodibenzofuran
 PeCDD Pentachlorodibenzo-p-dioxin
 PeCDF Pentachlorodibenzofuran
 pg/L Picograms per liter
 TCDD Tetrachlorodibenzo-p-dioxin
 TCDF Tetrachlorodibenzofuran
 TEQ Toxic equivalent
 USEPA U.S. Environmental Protection Agency

Qualifiers:
 J Analyte was detected; concentration is considered to be an estimate.
 JQ Analyte was detected between the method detection limit and reporting limit; concentration is considered to be an estimate.
 U Analyte was not detected at the given reporting limit.
 UJ Analyte was not detected; concentration given is the reporting limit, which is considered to be an estimate.

Table 2.1
Lora Lake Apartments Parcel Groundwater Analytical Data

Location Name				MW-C2												
Sample ID				MW-C2-121218	MW-C2-031519	MW-C2-062119	MW-C2-092019	MW-C2-121819	MW-C2-033020	MW-C2-061720	MW-C2-102820	MW-C2-031621	MW-C2-032422	MW-C2-041423	MW-C2-032024	MW-C2-041525
Sample Date				12/12/2018	3/15/2019	6/21/2019	9/20/2019	12/18/2019	3/30/2020	6/17/2020	10/28/2020	3/16/2021	3/24/2022	4/14/2023	3/20/2024	4/15/2025
Analyte	CAS No.	Site CUL	Units													
Field Parameters																
Turbidity	--	--	NTU								0.80	1.90		3.57	1.78	3.67
Dissolved Metals by USEPA 200.8																
Arsenic	7440-38-2	5	µg/L	2.6	14	3.7	2.1	1.9	27	11	3.1	22	24	55	42	42
Phenols by USEPA 8041A																
Pentachlorophenol	87-86-5	1	µg/L	0.062	0.69	0.051	0.031									
Dioxins/Furans by USEPA 1613B																
2,3,7,8-TCDD	1746-01-6	--	pg/L	0.370 U	2.41 U	1.94 U	1.95 U									
1,2,3,7,8-PeCDD	40321-76-4	--	pg/L	0.440 U	3.25 U	1.82 U	1.17 U									
1,2,3,4,7,8-HxCDD	39227-28-6	--	pg/L	0.530 U	3.69 U	1.20 U	1.50 U									
1,2,3,6,7,8-HxCDD	57653-85-7	--	pg/L	0.900 U	4.96 J	1.11 U	1.29 U									
1,2,3,7,8,9-HxCDD	19408-74-3	--	pg/L	0.550 U	3.65 U	1.19 U	1.42 U									
1,2,3,4,6,7,8-HpCDD	35822-46-9	--	pg/L	22.5	86.5	47.8	14.8									
OCDD	3268-87-9	--	pg/L	232 J	553	515 J	126 J									
2,3,7,8-TCDF	51207-31-9	--	pg/L	0.450 U	3.49 U	1.87 U	1.69 U									
1,2,3,7,8-PeCDF	57117-41-6	--	pg/L	0.670 U	2.62 U	1.67 U	1.42 U									
2,3,4,7,8-PeCDF	57117-31-4	--	pg/L	0.400 U	2.35 U	1.42 U	1.10 U									
1,2,3,4,7,8-HxCDF	70648-26-9	--	pg/L	0.550 J	1.87 U	1.26 U	1.11 U									
1,2,3,6,7,8-HxCDF	57117-44-9	--	pg/L	0.450 U	1.89 U	1.27 U	1.12 U									
1,2,3,7,8,9-HxCDF	72918-21-9	--	pg/L	0.330 U	2.08 U	1.31 U	1.25 U									
2,3,4,6,7,8-HxCDF	60851-34-5	--	pg/L	0.530 J	1.70 U	1.15 U	1.10 U									
1,2,3,4,6,7,8-HpCDF	67562-39-4	--	pg/L	4.71 J	13.8	12.0 U	3.60 U									
1,2,3,4,7,8,9-HpCDF	55673-89-7	--	pg/L	0.580 U	2.03 U	1.84 U	0.740 U									
OCDF	39001-02-0	--	pg/L	21.2 J	40.5	45.2 J	13.8 J									
Dioxin/furan TEQ	--	6.7	pg/L	1.09 J	5.83 J	3.35 J	2.48 J									

Notes:

Blank cells are intentional.

-- Not available.

BOLD/RED Analyte detected at a concentration greater than the site CUL.

1 In 2018, location MW-C4 was found to be filled with sand and was not sampled in December 2018, March 2019, or June 2019. After coordination with Ecology, this well was abandoned and a replacement well was installed within a few feet of the original well location in August 2019.

Abbreviations:

CAS Chemical Abstracts Service	OCDD Octachlorodibenzo-p-dioxin
CUL Cleanup level	OCDF Octachlorodibenzofuran
Ecology Washington State Department of Ecology	PeCDD Pentachlorodibenzo-p-dioxin
HpCDD Heptachlorodibenzo-p-dioxin	PeCDF Pentachlorodibenzofuran
HpCDF Heptachlorodibenzofuran	pg/L Picograms per liter
HxCDD Hexachlorodibenzo-p-dioxin	TCDD Tetrachlorodibenzo-p-dioxin
HxCDF Hexachlorodibenzofuran	TCDF Tetrachlorodibenzofuran
µg/L Micrograms per liter	TEQ Toxic equivalent
NTU Nephelometric turbidity units	USEPA U.S. Environmental Protection Agency

Qualifiers:

J Analyte was detected; concentration is considered to be an estimate.

JQ Analyte was detected between the method detection limit and reporting limit; concentration is considered to be an estimate.

U Analyte was not detected at the given reporting limit.

UJ Analyte was not detected; concentration given is the reporting limit, which is considered to be an estimate.

Table 2.1
Lora Lake Apartments Parcel Groundwater Analytical Data

Location Name				MW-C3												MW-C4 ⁽¹⁾					
Sample ID				MW-C3-121218	MW-C3-031519	MW-C3-062119	MW-C3-092019	MW-C3-121819	MW-C3-033020	MW-C3-061720	MW-C3-102820	MW-C3-031621	MW-C3-031621-D	MW-C3-032422	MW-C3-041423	MW-C3-032024	MW-C3-041525	MW-C4-092019	MW-C4-121819	MW-C4-033020	MW-C4-061720
Sample Date				12/12/2018	3/15/2019	6/21/2019	9/20/2019	12/18/2019	3/30/2020	6/17/2020	10/28/2020	3/16/2021	3/16/2021	3/24/2022	4/14/2023	3/20/2024	4/15/2025	9/20/2019	12/18/2019	3/30/2020	6/17/2020
Analyte	CAS No.	Site CUL	Units																		
Field Parameters																					
Turbidity	--	--	NTU								1.93	2.57			1.64	1.66	3.69				
Dissolved Metals by USEPA 200.8																					
Arsenic	7440-38-2	5	µg/L	0.24	0.26	0.20 JQ	0.22	0.22	0.25	0.22	0.22	0.19 JQ	0.21	0.19 JQ	0.18 J	0.15 J	0.14 J	0.47	0.42	0.37	0.49
Phenols by USEPA 8041A																					
Pentachlorophenol	87-86-5	1	µg/L	0.025 U	0.025 U	0.025	0.025 U										0.025 U				
Dioxins/Furans by USEPA 1613B																					
2,3,7,8-TCDD	1746-01-6	--	pg/L	0.350 U	0.650 U	2.01 U	1.71 U										1.73 U				
1,2,3,7,8-PeCDD	40321-76-4	--	pg/L	0.330 U	0.670 U	1.14 U	1.34 U										0.980 U				
1,2,3,4,7,8-HxCDD	39227-28-6	--	pg/L	0.390 U	0.770 U	1.02 U	1.55 UJ										0.960 U				
1,2,3,6,7,8-HxCDD	57653-85-7	--	pg/L	0.380 U	0.730 U	0.940 U	1.39 U										0.870 U				
1,2,3,7,8,9-HxCDD	19408-74-3	--	pg/L	0.400 U	0.780 U	1.01 U	1.50 U										0.930 U				
1,2,3,4,6,7,8-HpCDD	35822-46-9	--	pg/L	0.520 U	1.03 U	1.45 U	1.60 U										1.45 U				
OCDD	3268-87-9	--	pg/L	3.23 J	9.11 J	4.34 J	4.98 UJ										10.7 U				
2,3,7,8-TCDF	51207-31-9	--	pg/L	0.310 U	0.710 U	1.49 U	1.92 U										1.82 U				
1,2,3,7,8-PeCDF	57117-41-6	--	pg/L	0.310 U	0.820 U	1.23 U	1.19 U										1.03 U				
2,3,4,7,8-PeCDF	57117-31-4	--	pg/L	0.290 U	0.750 U	1.00 U	0.960 U										0.850 U				
1,2,3,4,7,8-HxCDF	70648-26-9	--	pg/L	0.180 U	0.540 U	0.800 U	0.750 U										0.720 U				
1,2,3,6,7,8-HxCDF	57117-44-9	--	pg/L	0.180 U	0.510 U	0.830 U	0.720 U										0.700 U				
1,2,3,7,8,9-HxCDF	72918-21-9	--	pg/L	0.520 U	0.540 U	0.870 U	0.830 U										0.750 U				
2,3,4,6,7,8-HxCDF	60851-34-5	--	pg/L	0.180 U	0.500 U	0.760 U	0.740 U										0.700 U				
1,2,3,4,6,7,8-HpCDF	67562-39-4	--	pg/L	0.140 U	0.330 U	0.580 U	0.550 U										0.590 U				
1,2,3,4,7,8,9-HpCDF	55673-89-7	--	pg/L	0.180 U	0.440 U	0.750 UJ	0.810 U										0.860 U				
OCDF	39001-02-0	--	pg/L	0.690 UJ	1.02 U	2.82 UJ	2.76 UJ										2.80 U				
Dioxin/furan TEQ	--	6.7	pg/L	0.520 J	1.05 J	2.15 J	2.17 UJ										1.89 U				

Notes:

Blank cells are intentional.

-- Not available.

BOLD/RED Analyte detected at a concentration greater than the site CUL.

¹ In 2018, location MW-C4 was found to be filled with sand and was not sampled in December 2018, March 2019, or June 2019. After coordination with Ecology, this well was abandoned and a replacement well was installed within a few feet of the original well location in August 2019.

Abbreviations:

CAS Chemical Abstracts Service	OCDD Octachlorodibenzo-p-dioxin
CUL Cleanup level	OCDF Octachlorodibenzofuran
Ecology Washington State Department of Ecology	PeCDD Pentachlorodibenzo-p-dioxin
HpCDD Heptachlorodibenzo-p-dioxin	PeCDF Pentachlorodibenzofuran
HpCDF Heptachlorodibenzofuran	pg/L Picograms per liter
HxCDD Hexachlorodibenzo-p-dioxin	TCDD Tetrachlorodibenzo-p-dioxin
HxCDF Hexachlorodibenzofuran	TCDF Tetrachlorodibenzofuran
µg/L Micrograms per liter	TEQ Toxic equivalent
NTU Nephelometric turbidity units	USEPA U.S. Environmental Protection Agency

Qualifiers:

J Analyte was detected; concentration is considered to be an estimate.

JQ Analyte was detected between the method detection limit and reporting limit; concentration is considered to be an estimate.

U Analyte was not detected at the given reporting limit.

UJ Analyte was not detected; concentration given is the reporting limit, which is considered to be an estimate.

Table 3.1
Lora Lake Parcel Sediment Confirmation Monitoring Analytical Data

Location Group				On-Site Wells																	
Location Name				MW-CP1								MW-CP2									
Sample ID				MW-CP1-102720	MW-CP1-031721	MW-CP1-032322	MW-CP1-032322-D	MW-CP1-041323	MW-CP1-041323-D	MW-CP1-041625	MW-CP1-042424-D	MW-CP1-041625	MW-CP1-041625-D	MW-CP2-102720	MW-CP2-102720-D	MW-CP2-031721	MW-CP2-031721-D	MW-CP2-032322	MW-CP2-041323	MW-CP2-042424	MW-CP2-041625
Sample Date				10/27/2020	3/17/2021	3/23/2022	3/23/2022	4/13/2023	4/13/2023	4/24/2024	4/24/2024	4/16/2025	4/16/2025	10/27/2020	10/27/2020	3/17/2021	3/17/2021	3/23/2022	4/13/2023	4/24/2024	4/16/2025
Analyte	CAS No.	Site CUL	Unit																		
Field Parameters																					
Turbidity	--	--	NTU	0.6	0.58					0.44		3.04		1.34		1.36			0.99	2.44	
Dissolved Metals by USEPA 200.8																					
Arsenic	7440-38-2	5	µg/L	0.46	0.46	0.55	0.51	0.49	0.49	0.48	0.42	0.28	0.30	0.21	0.24	0.21	0.21	0.33	0.39	0.36	0.40
Dioxins/Furans by USEPA 1613B																					
2,3,7,8-TCDD	1746-01-6	--	pg/L	1.05 U	0.580 U	1.38 U	1.19 U	1.05 U	0.730 U	1.49 U	1.53 U	2.42 U	2.01 U	0.960 U	0.800 U	0.630 U	0.450 U	1.44 U	0.780 U	1.01 U	1.90 J
1,2,3,7,8-PeCDD	40321-76-4	--	pg/L	0.870 U	0.720 U	1.60 U	1.43 U	1.11 U	1.02 U	2.28 U	2.25 U	3.50 U	3.96 UJ	0.950 U	0.620 U	0.760 U	0.500 U	1.93 U	1.44 U	1.45 U	3.42 UJ
1,2,3,4,7,8-HxCDD	39227-28-6	--	pg/L	1.37 U	0.780 U	1.74 U	1.44 J	0.980 U	0.700 U	4.24 U	2.92 U	4.33 U	4.62 U	1.06 U	0.780 U	0.700 U	0.660 U	1.69 U	0.820 U	1.96 U	4.02 U
1,2,3,6,7,8-HxCDD	57653-85-7	--	pg/L	1.20 U	0.710 U	1.65 U	1.23 U	0.900 U	0.670 U	4.12 U	2.93 U	4.28 U	4.72 U	0.900 U	0.650 U	0.650 U	0.670 U	1.65 U	0.760 U	1.87 U	4.08 U
1,2,3,7,8,9-HxCDD	19408-74-3	--	pg/L	1.43 U	0.770 U	1.83 U	1.36 U	1.03 U	0.750 U	4.53 U	3.18 U	4.66 U	5.07 U	1.09 U	0.790 U	0.690 U	0.710 U	1.80 U	0.870 U	2.14 U	4.39 U
1,2,3,4,6,7,8-HpCDD	35822-46-9	--	pg/L	9.24 U	0.990 U	1.79 J	3.19 J	2.83 U	1.91 U	4.33 U	3.00 U	5.28 U	6.28 U	1.68 U	1.26 U	0.820 U	0.620 U	1.64 U	11.2 U	2.26 U	7.88 J
OCDD	3268-87-9	--	pg/L	165 J	6.64 U	17.3 J	15.7 J	7.62 U	5.58 U	6.25 U	4.45 U	6.94 U	8.51 U	27.0 UJ	21.3 UJ	6.64 U	3.10 U	3.60 U	72.9 U	3.04 U	80.0
2,3,7,8-TCDF	51207-31-9	--	pg/L	1.16 U	0.640 U	1.11 U	0.780 U	1.13 U	0.960 U	1.72 U	1.49 U	2.37 UJ	2.86 U	1.15 U	0.800 U	0.620 U	0.530 U	0.940 U	1.03 U	1.77 U	2.65 UJ
1,2,3,7,8-PeCDF	57117-41-6	--	pg/L	1.64 U	0.700 U	1.08 U	1.60 J	1.33 U	1.02 U	2.02 U	1.66 U	2.76 UJ	2.74 U	1.39 U	1.11 U	0.820 U	0.940 U	1.14 U	1.24 U	1.12 U	2.54 U
2,3,4,7,8-PeCDF	57117-31-4	--	pg/L	1.51 U	0.630 U	1.01 U	0.750 U	1.20 U	0.930 U	2.03 U	1.70 U	2.93 UJ	2.91 UJ	1.26 U	0.990 U	0.750 U	0.690 U	1.04 U	1.16 U	1.19 U	2.76 U
1,2,3,4,7,8-HxCDF	70648-26-9	--	pg/L	0.850 U	0.640 U	1.30 U	1.85 J	1.13 U	0.660 U	1.92 U	1.44 U	2.52 U	2.66 U	0.610 U	0.440 U	0.660 U	0.620 U	1.36 U	0.620 U	1.02 U	2.05 U
1,2,3,6,7,8-HxCDF	57117-44-9	--	pg/L	0.880 U	0.660 U	1.35 U	1.83 J	0.880 U	0.650 U	1.88 U	1.39 U	2.38 U	2.49 U	0.570 U	0.430 U	0.670 U	0.630 U	1.39 U	0.620 U	1.00 U	2.12 U
1,2,3,7,8,9-HxCDF	72918-21-9	--	pg/L	1.25 U	0.740 U	1.60 U	1.15 U	0.950 U	0.750 U	2.66 U	1.95 U	4.12 U	4.03 U	0.900 U	0.630 U	0.770 U	0.710 U	1.66 U	0.710 U	1.57 U	3.37 U
2,3,4,6,7,8-HxCDF	60851-34-5	--	pg/L	0.900 U	0.620 U	1.33 U	0.990 J	0.890 U	0.690 U	2.00 U	1.59 U	2.66 U	2.79 U	0.600 U	0.460 U	0.640 U	0.610 U	1.39 U	0.640 U	1.10 U	2.12 U
1,2,3,4,6,7,8-HpCDF	67562-39-4	--	pg/L	2.35 U	0.620 U	1.18 U	0.900 U	1.14 U	0.830 U	2.24 U	1.71 U	2.22 U	2.89 U	0.560 U	0.550 U	0.550 U	0.940 U	1.15 U	5.84 J	1.07 U	3.07 U
1,2,3,4,7,8,9-HpCDF	55673-89-7	--	pg/L	1.23 U	0.790 U	1.72 U	1.20 U	1.63 U	1.21 U	4.06 U	2.82 U	4.16 U	5.43 UJ	0.840 U	0.790 U	0.720 U	0.690 U	1.59 U	1.37 U	1.98 U	5.27 U
OCDF	39001-02-0	--	pg/L	20.2 UJ	18.8 U	2.71 U	1.70 U	2.12 U	2.27 U	4.70 U	3.73 U	7.21 U	6.12 U	3.08 UJ	2.88 UJ	12.0 U	6.36 U	2.86 U	29.3	3.32 U	11.6 J
Dioxin/furan TEQ ⁽²⁾	--	6.7	pg/L	1.78 J	0.720 U	2.29 J	2.35 J	1.11 U	1.02 U	2.28 U	2.25 U	3.50 UJ	3.96 UJ	0.480 UJ	1.14 UJ	0.760 U	0.500 U	1.93 U	1.75 J	1.45 U	5.45 J

Notes:
 -- Not available.
BOLD/RED Analyte detected at a concentration greater than the site CUL.
 1 On October 28, 2020, MW-VB2 was dry and samples were unable to be collected.
 2 The TEQ is calculated by summing the detected dioxins/furans multiplied by their specific TEF value. Nondetect dioxins/furans use half the resulting value and are added to the sum. If no dioxins/furans were detected, the maximum detection limit after multiplying by the specific TEF value is reported.

Abbreviations:
 CAS Chemical Abstracts Service
 CUL Cleanup level
 HpCDD Heptachlorodibenzo-p-dioxin
 HpCDF Heptachlorodibenzofuran
 HxCDD Hexachlorodibenzo-p-dioxin
 HxCDF Hexachlorodibenzofuran
 µg/L Micrograms per liter
 NS Not sampled
 NTU Nephelometric turbidity units
 OCDD Octachlorodibenzo-p-dioxin
 OCDF Octachlorodibenzofuran
 PeCDD Pentachlorodibenzo-p-dioxin
 PeCDF Pentachlorodibenzofuran
 pg/L Picograms per liter
 TCDD Tetrachlorodibenzo-p-dioxin
 TCDF Tetrachlorodibenzofuran
 TEF Toxic equivalent factor
 TEQ Toxic equivalent

Qualifiers:
 J Analyte was detected; concentration is considered to be an estimate.
 JQ Analyte was detected between the method detection limit and reporting limit; concentration is considered to be an estimate.
 U Analyte was not detected at the given reporting limit.
 UJ Analyte was not detected; concentration given is the reporting limit, which is considered to be an estimate.

Table 3.1
Lora Lake Parcel Sediment Confirmation Monitoring Analytical Data

Location Group				On-Site Wells (cont.)						Vicinity Wells											
Location Name				MW-CP3						MW-CP4						MW-CP5					
Sample ID				MW-CP3-102720	MW-CP3-031721	MW-CP3-032322	MW-CP3-041323	MW-CP3-042424	MW-CP3-041625	MW-CP4-102720	MW-CP4-031621	MW-CP4-032322	MW-CP4-041323	MW-CP4-042424	MW-CP4-041625	MW-CP5-102720	MW-CP5-031621	MW-CP5-032322	MW-CP5-041323	MW-CP5-042424	MW-CP5-041625
Sample Date				10/27/2020	3/17/2021	3/23/2022	4/13/2023	4/24/2024	4/16/2025	10/27/2020	3/16/2021	3/23/2022	4/13/2023	4/24/2024	4/16/2025	10/27/2020	3/16/2021	3/23/2022	4/13/2023	4/24/2024	4/16/2025
Analyte	CAS No.	Site CUL	Unit																		
Field Parameters																					
Turbidity	--	--	NTU	0.74	0.91			0.82	2.37	0.95	0.55			0.81	4.76	17.1	9.38			4.5	5.85
Dissolved Metals by USEPA 200.8																					
Arsenic	7440-38-2	5	µg/L	0.41	0.33	0.97	0.11 J	2.9	3.1	0.098 JQ	0.14 JQ	0.093 JQ	1.6	0.13 J	0.12 J	3.2	2.1	3.7	1.2	9.8	3.4
Dioxin/Furans by USEPA 1613B																					
2,3,7,8-TCDD	1746-01-6	--	pg/L	1.03 U	0.800 U	1.31 U	0.860 U	1.31 U	1.80 U	1.05 U	0.630 U	1.22 U	1.27 U	1.23 U	0.336 U	0.780 U	0.690 U	1.38 U	3.86 UJ	1.01 U	2.07 U
1,2,3,4,7,8-PeCDD	40321-76-4	--	pg/L	0.840 U	0.730 U	1.53 U	1.36 U	2.03 U	3.17 UJ	0.940 U	0.950 U	1.31 U	1.27 U	1.82 U	0.747 U	0.670 U	0.930 U	1.66 U	3.30 UJ	1.81 U	3.63 UJ
1,2,3,4,7,8-HxCDD	39227-28-6	--	pg/L	1.36 U	0.650 U	1.75 U	1.05 U	2.15 U	3.43 U	1.41 U	0.960 U	1.53 U	0.980 U	2.23 U	0.681 U	0.670 U	0.720 U	1.55 U	1.72 UJ	1.69 U	5.94 U
1,2,3,6,7,8-HxCDD	57653-85-7	--	pg/L	1.18 U	0.620 U	1.67 U	1.01 U	2.16 U	3.50 U	1.21 U	0.930 U	1.54 U	0.920 U	2.14 U	0.775 U	0.630 UJ	0.720 U	1.44 U	1.61 UJ	1.61 U	6.07 U
1,2,3,7,8,9-HxCDD	19408-74-3	--	pg/L	1.41 U	0.650 U	1.24 J	1.13 U	2.41 U	3.76 U	1.46 U	0.970 U	1.66 U	1.04 U	2.44 U	0.686 U	0.720 U	0.740 U	1.61 U	1.83 UJ	1.84 U	6.52 U
1,2,3,4,6,7,8-HpCDD	35822-46-9	--	pg/L	2.03 U	0.700 U	1.78 U	1.49 U	2.23 U	3.90 U	2.57 U	1.74 U	1.47 U	1.38 U	2.14 U	0.663 U	2.18 J	2.12 U	1.74 U	3.33 UJ	2.04 U	4.84 U
OCDD	3268-87-9	--	pg/L	33.0 UJ	9.26 U	3.54 U	6.58 U	3.36 U	4.39 U	54.1 UJ	5.92 U	5.33 J	5.61 U	3.38 U	1.76 UJ	23.8 UJ	10.6 U	4.65 J	17.0 UJ	3.06 U	5.49 U
2,3,7,8-TCDF	51207-31-9	--	pg/L	1.39 U	0.710 U	0.950 U	1.32 U	1.90 U	2.37 UJ	1.23 U	0.550 U	0.890 U	1.49 U	1.97 U	0.456 U	0.780 U	0.680 U	0.950 U	5.23 UJ	1.96 U	3.49 UJ
1,2,3,7,8-PeCDF	57117-41-6	--	pg/L	1.29 U	0.900 U	1.02 U	1.73 U	1.64 U	2.59 UJ	1.83 U	0.850 U	1.20 U	1.38 U	1.57 U	0.380 U	1.32 U	1.07 U	1.09 U	3.53 UJ	1.37 U	3.60 UJ
2,3,4,7,8-PeCDF	57117-31-4	--	pg/L	1.17 U	0.860 U	0.960 U	1.19 U	1.71 U	2.69 UJ	1.65 U	0.770 U	1.12 U	1.25 U	1.64 U	0.330 U	1.18 U	0.780 U	1.07 U	3.18 UJ	1.41 U	3.82 UJ
1,2,3,4,7,8-HxCDF	70648-26-9	--	pg/L	0.790 U	0.590 U	1.31 U	0.820 U	1.09 U	1.96 U	0.720 U	0.660 U	1.06 U	0.790 U	1.09 U	0.569 U	0.590 U	0.640 U	1.10 U	1.58 UJ	0.920 U	2.650 U
1,2,3,6,7,8-HxCDF	57117-44-9	--	pg/L	0.740 U	0.590 U	1.30 U	0.790 U	1.05 U	1.86 U	0.650 U	0.630 U	1.07 U	0.820 U	1.02 U	0.560 U	0.570 U	0.670 U	1.07 U	1.46 UJ	0.890 U	2.670 U
1,2,3,7,8,9-HxCDF	72918-21-9	--	pg/L	1.20 U	0.700 U	1.69 U	0.970 U	1.67 U	2.82 U	1.05 U	0.810 U	1.33 U	0.890 U	1.56 U	0.583 U	0.760 U	0.750 U	1.35 U	1.83 UJ	1.38 U	4.40 U
2,3,4,6,7,8-HxCDF	60851-34-5	--	pg/L	0.820 U	0.590 U	1.33 U	0.860 U	1.21 U	2.07 U	0.770 U	0.660 U	1.06 U	0.800 U	1.14 U	0.536 U	0.560 U	0.630 U	1.04 U	1.56 UJ	0.990 U	2.700 U
1,2,3,4,6,7,8-HpCDF	67562-39-4	--	pg/L	0.880 U	1.13 U	1.25 U	0.960 U	1.19 U	2.15 U	0.600 U	1.07 U	1.06 U	1.08 U	0.920 U	0.507 U	0.680 U	1.26 U	1.25 U	2.17 UJ	0.910 U	3.040 U
1,2,3,4,7,8,9-HpCDF	55673-89-7	--	pg/L	1.14 U	0.690 U	1.71 U	1.43 U	2.02 U	3.28 UJ	0.960 U	1.49 U	1.58 U	1.60 U	1.70 U	0.657 U	0.760 U	0.710 U	1.68 U	3.01 UJ	1.68 U	4.93 UJ
OCDF	39001-02-0	--	pg/L	2.84 UJ	24.3 U	2.66 U	3.09 U	3.43 U	3.85 U	5.93 J	18.2 U	2.10 U	2.23 U	2.95 U	0.972 U	4.01 UJ	24.8 U	2.40 U	3.35 UJ	2.25 U	5.77 U
Dioxin/furan TEQ	--	6.7	pg/L	0.515 UJ	0.800 U	2.23 J	1.36 U	2.03 U	3.17 UJ	1.73 J	0.950 U	1.98 J	1.27 U	1.82 U	0.747 UJ	1.22 J	0.930 U	2.23 J	3.86 UJ	1.81 U	3.63 UJ

Notes:

-- Not available.

BOLD/RED Analyte detected at a concentration greater than the site CUL.

1 On October 28, 2020, MW-VB2 was dry and samples were unable to be collected.

2 The TEQ is calculated by summing the detected dioxins/furans multiplied by their specific TEF value. Nondetect dioxins/furans use half the resulting value and are added to the sum. If no dioxins/furans were detected, the maximum detection limit after multiplying by the specific TEF value is reported.

Abbreviations:

CAS Chemical Abstracts Service	OCDD Octachlorodibenzo-p-dioxin
CUL Cleanup level	OCDF Octachlorodibenzofuran
HpCDD Heptachlorodibenzo-p-dioxin	PeCDD Pentachlorodibenzo-p-dioxin
HpCDF Heptachlorodibenzofuran	PeCDF Pentachlorodibenzofuran
HxCDD Hexachlorodibenzo-p-dioxin	pg/L Picograms per liter
HxCDF Hexachlorodibenzofuran	TCDD Tetrachlorodibenzo-p-dioxin
µg/L Micrograms per liter	TCDF Tetrachlorodibenzofuran
NS Not sampled	TEF Toxic equivalent factor
NTU Nephelometric turbidity units	TEQ Toxic equivalent

Qualifiers:

J Analyte was detected; concentration is considered to be an estimate.

JQ Analyte was detected between the method detection limit and reporting limit; concentration is considered to be an estimate.

U Analyte was not detected at the given reporting limit.

UJ Analyte was not detected; concentration given is the reporting limit, which is considered to be an estimate.

Table 3.1
Lora Lake Parcel Sediment Confirmation Monitoring Analytical Data

Location Group				Vicinity Wells (cont.)																	
Location Name				MW-CP6						MW-CP7						HCOO-B312					
Sample ID				MW-CP6-102720	MW-CP6-031621	MW-CP6-032322	MW-CP6-041323	MW-CP6-042424	MW-CP6-041625	MW-CP7-102720	MW-CP7-031621	MW-CP7-032322	MW-CP7-041323	MW-CP7-042424	MW-CP7-041625	HCOO-B312-102820	HCOO-B312-031621	HCOO-B312-032322	HCOO-B312-041323	HCOO-B312-042424	HCOO-B312-041525
Sample Date				10/27/2020	3/16/2021	3/23/2022	4/13/2023	4/24/2024	4/16/2025	10/27/2020	3/16/2021	3/23/2022	4/13/2023	4/24/2024	4/16/2025	10/28/2020	3/16/2021	3/23/2022	4/13/2023	4/24/2024	4/15/2025
Analyte	CAS No.	Site CUL	Unit																		
Field Parameters																					
Turbidity	--	--	NTU	1.15	3.73			5.52	6.74	2.08	1.05			1.14	2.41	0.73	1.8			1.69	3.85
Dissolved Metals by USEPA 200.8																					
Arsenic	7440-38-2	5	µg/L	1.1	1.1	0.85	0.68	0.92	1.1	0.42	0.43	0.37	0.38	0.32	0.34	0.17 JQ	0.17 JQ	0.17 JQ	0.15 J	0.18 J	0.16 J
Dioxin/Furans by USEPA 1613B																					
2,3,7,8-TCDD	1746-01-6	--	pg/L	0.930 U	1.33 U	0.980 U	1.76 U	1.07 U	2.34 U	0.670 U	1.15 U	1.01 U	0.830 U	1.13 U	1.84 U	0.870 U	2.89 UJ	1.11 U	0.710 U	1.32 U	2.02 U
1,2,3,7,8-PeCDD	40321-76-4	--	pg/L	0.920 UJ	2.26 U	1.41 U	0.960 U	1.80 U	3.08 UJ	0.660 U	1.08 U	1.29 U	1.26 U	1.68 U	3.04 U	0.910 U	3.16 UJ	1.48 U	1.17 U	2.46 U	4.28 UJ
1,2,3,4,7,8-HxCDD	39227-28-6	--	pg/L	1.40 U	1.95 U	1.50 U	0.760 U	2.01 U	4.50 U	0.810 U	1.36 U	0.940 U	1.15 U	1.94 U	2.94 U	1.08 U	3.33 U	1.33 U	0.890 U	3.49 U	3.83 U
1,2,3,6,7,8-HxCDD	57653-85-7	--	pg/L	1.20 U	1.93 U	1.44 U	0.720 U	1.93 U	4.51 U	0.680 U	1.29 U	0.890 U	1.09 U	1.87 U	3.08 U	1.00 U	3.21 U	1.31 U	0.840 U	3.47 U	4.14 U
1,2,3,7,8,9-HxCDD	19408-74-3	--	pg/L	1.44 U	2.00 U	1.59 U	0.810 U	2.20 U	4.88 U	0.830 U	1.36 U	0.980 U	1.23 U	2.13 U	3.27 U	1.16 U	3.36 U	1.43 U	0.950 U	3.77 U	4.33 U
1,2,3,4,6,7,8-HpCDD	35822-46-9	--	pg/L	1.32 U	1.77 U	2.46 J	0.950 U	2.45 U	4.34 U	3.02 J	1.85 U	1.44 U	1.42 U	2.08 U	4.19 U	1.10 U	6.85 UJ	3.78 J	1.41 U	3.68 U	5.56 U
OCDD	3268-87-9	--	pg/L	28.6 UJ	2.46 U	34.6 J	6.55 U	3.74 U	5.98 U	36.1 UJ	10.5 U	3.28 J	9.81 U	3.35 U	8.58 U	10.2 UJ	16.4 UJ	23.3 J	5.86 U	5.45 U	7.91 U
2,3,7,8-TCDF	51207-31-9	--	pg/L	0.990 U	1.34 U	0.970 U	2.09 U	1.89 U	2.53 U	0.740 U	1.20 U	0.790 U	1.11 U	1.73 U	2.31 U	0.870 U	4.22 UJ	0.640 U	1.04 U	1.85 U	2.94 UJ
1,2,3,7,8-PeCDF	57117-41-6	--	pg/L	1.53 UJ	1.83 U	1.05 U	0.980 U	1.34 U	2.28 U	1.14 U	1.04 U	1.15 J	1.21 U	1.49 U	2.16 U	1.19 U	4.27 UJ	0.950 U	1.43 U	1.94 U	2.01 U
2,3,4,7,8-PeCDF	57117-31-4	--	pg/L	1.42 UJ	1.73 U	0.970 U	0.890 U	1.35 U	2.33 U	1.01 U	0.950 U	0.910 U	1.09 U	1.50 U	2.25 U	1.07 U	4.39 UJ	1.70 J	1.30 U	1.99 U	2.18 UJ
1,2,3,4,7,8-HxCDF	70648-26-9	--	pg/L	0.700 U	1.59 U	1.18 U	0.520 U	1.22 U	2.24 U	0.540 U	1.25 U	0.940 U	0.740 U	1.01 U	1.98 U	0.600 U	2.67 U	0.920 U	0.730 U	1.75 U	2.60 U
1,2,3,6,7,8-HxCDF	57117-44-9	--	pg/L	0.690 U	1.63 U	1.22 U	0.520 U	1.09 U	2.13 U	0.500 U	1.25 U	0.960 U	0.740 U	0.960 U	2.00 U	0.570 U	2.67 U	0.970 J	0.730 U	1.68 U	2.73 U
1,2,3,7,8,9-HxCDF	72918-21-9	--	pg/L	1.09 U	2.04 U	1.55 U	0.640 U	1.96 U	3.42 U	0.790 U	1.55 U	1.27 U	0.870 U	1.50 U	2.97 U	0.850 U	6.79 UJ	1.21 U	0.890 U	2.29 U	4.56 U
2,3,4,6,7,8-HxCDF	60851-34-5	--	pg/L	0.720 U	1.81 U	1.20 U	0.520 U	1.25 U	2.25 U	0.570 U	1.25 U	0.960 U	0.790 U	1.09 U	2.01 U	0.640 U	5.20 UJ	1.07 J	0.750 U	1.74 U	2.71 U
1,2,3,4,6,7,8-HpCDF	67562-39-4	--	pg/L	0.660 U	1.02 U	1.12 U	0.630 U	1.15 U	2.44 U	0.510 U	1.43 U	0.760 U	1.12 U	1.13 U	2.17 U	0.590 U	4.44 J	1.28 U	0.970 U	1.65 U	3.01 U
1,2,3,4,7,8,9-HpCDF	55673-89-7	--	pg/L	1.06 U	1.44 U	1.63 U	0.900 U	2.24 U	4.02 U	0.730 U	1.96 U	1.11 U	1.65 U	2.00 U	3.77 U	0.820 U	6.37 UJ	1.89 U	1.51 U	3.08 U	5.14 UJ
OCDF	39001-02-0	--	pg/L	3.20 UJ	15.3 U	2.08 U	1.63 U	2.94 U	4.88 U	5.16 UJ	25.4 U	2.03 U	3.32 U	3.13 U	5.02 U	2.09 UJ	117 UJ	2.82 U	2.49 U	5.07 U	5.91 U
Dioxin/furan TEQ	--	6.7	pg/L	0.465 UJ	2.26 U	1.94 J	1.76 U	1.80 U	3.08 UJ	1.15 J	1.15 U	1.73 J	1.26 U	1.68 U	3.04 U	0.455 UJ	5.45 J	2.43 J	1.17 U	2.46 U	4.28 UJ

Notes:

- Not available.
- BOLD/RED** Analyte detected at a concentration greater than the site CUL.
- 1 On October 28, 2020, MW-VB2 was dry and samples were unable to be collected.
- 2 The TEQ is calculated by summing the detected dioxins/furans multiplied by their specific TEF value. Nondetect dioxins/furans use half the resulting value and are added to the sum. If no dioxins/furans were detected, the maximum detection limit after multiplying by the specific TEF value is reported.

Abbreviations:

CAS Chemical Abstracts Service	OCDD Octachlorodibenzo-p-dioxin
CUL Cleanup level	OCDF Octachlorodibenzofuran
HpCDD Heptachlorodibenzo-p-dioxin	PeCDD Pentachlorodibenzo-p-dioxin
HpCDF Heptachlorodibenzofuran	PeCDF Pentachlorodibenzofuran
HxCDD Hexachlorodibenzo-p-dioxin	pg/L Picograms per liter
HxCDF Hexachlorodibenzofuran	TCDD Tetrachlorodibenzo-p-dioxin
µg/L Micrograms per liter	TCDF Tetrachlorodibenzofuran
NS Not sampled	TEF Toxic equivalent factor
NTU Nephelometric turbidity units	TEQ Toxic equivalent

Qualifiers:

- J Analyte was detected; concentration is considered to be an estimate.
- JQ Analyte was detected between the method detection limit and reporting limit; concentration is considered to be an estimate.
- U Analyte was not detected at the given reporting limit.
- UJ Analyte was not detected; concentration given is the reporting limit, which is considered to be an estimate.

Table 3.1
Lora Lake Parcel Sediment Confirmation Monitoring Analytical Data

Location Group				Vicinity Wells (cont.)																	
Location Name				MW-C1/VB1									MW-VB2								
Sample ID				MW-C1/VB1-102820	MW-C101-102820	MW-C1/VB1-031721	MW-C1/VB1-032422	MW-C1/VB1-032422-D	MW-VB1-041423	MW-VB1-041423-D	MW-C1-VB1-042424	MW-C1-VB1-042424-D	MW-C1-VB1-041525	--	MW-VB2-031721	MW-VB2-032422	MW-VB2-041423	MW-VB2-042424	MW-VB2-041525		
Sample Date				10/28/2020	10/28/2020	3/17/2021	3/24/2022	3/24/2022	4/14/2023	4/14/2023	4/24/2024	4/24/2024	4/15/2025	10/28/2020 ⁽¹⁾	3/17/2021	3/24/2022	4/14/2023	4/24/2024	4/15/2025		
Analyte	CAS No.	Site CUL	Unit																		
Field Parameters																					
Turbidity	--	--	NTU	0.36		1.01								0.81	3.22			6.88		2.57	3.22
Dissolved Metals by USEPA 200.8																					
Arsenic	7440-38-2	5	µg/L	0.16 JQ	0.16 JQ	0.11 JQ	0.077 JQ	0.090 JQ	0.11 J	0.10 J	0.11 J	0.11 J	0.10 J	NS	0.47	0.35	0.37	0.40	0.37		
Dioxin/Furans by USEPA 1613B																					
2,3,7,8-TCDD	1746-01-6	--	pg/L	0.750 U	0.860 U	0.460 U	1.12 U	1.11 U	0.670 U	0.710 U	0.870 U	1.05 U	1.93 U	NS	0.750 U	1.09 U	0.670 U	1.16 U	1.71 U		
1,2,3,7,8-PeCDD	40321-76-4	--	pg/L	0.900 U	0.820 UJ	0.560 U	1.55 U	1.49 U	1.31 U	1.10 U	1.67 U	2.05 U	3.49 UJ	NS	1.00 U	1.41 U	1.13 U	2.52 U	3.18 U		
1,2,3,4,7,8-HxCDD	39227-28-6	--	pg/L	1.03 U	0.990 U	1.08 U	1.91 U	1.47 U	0.950 U	0.690 U	2.14 U	2.60 U	4.64 U	NS	0.900 U	1.24 U	0.980 U	2.87 U	4.59 U		
1,2,3,6,7,8-HxCDD	57653-85-7	--	pg/L	0.920 U	0.840 U	1.03 U	1.79 U	1.42 U	0.900 U	0.670 U	2.13 U	2.56 U	4.74 U	NS	0.860 U	1.19 U	0.940 U	2.84 U	4.91 U		
1,2,3,7,8,9-HxCDD	19408-74-3	--	pg/L	1.08 U	1.02 U	1.08 U	1.99 U	1.56 U	1.02 U	0.750 U	2.32 U	2.80 U	5.09 U	NS	0.910 U	1.31 U	1.05 U	3.10 U	5.16 U		
1,2,3,4,6,7,8-HpCDD	35822-46-9	--	pg/L	1.76 U	1.42 U	2.16 U	1.53 U	2.91 J	1.42 U	3.61 J	2.37 U	2.66 U	4.83 U	NS	1.32 U	2.02 U	1.93 U	3.45 U	3.89 U		
OCDD	3268-87-9	--	pg/L	49.1 UJ	66.5 UJ	10.8 U	3.18 J	5.59 J	2.02 U	9.88 U	5.10 U	4.44 U	5.79 U	NS	7.27 U	8.71 J	8.10 U	4.81 U	6.05 U		
2,3,7,8-TCDF	51207-31-9	--	pg/L	1.11 U	0.810 U	0.470 U	0.730 U	0.880 U	1.12 U	1.08 U	1.27 U	1.44 U	2.72 U	NS	0.680 U	0.770 U	0.970 U	1.60 U	2.67 U		
1,2,3,7,8-PeCDF	57117-41-6	--	pg/L	1.41 U	1.29 U	0.660 U	1.09 U	0.910 U	1.34 U	1.13 U	1.52 U	1.85 U	1.83 U	NS	0.800 U	0.830 J	1.14 U	1.96 U	3.21 J		
2,3,4,7,8-PeCDF	57117-31-4	--	pg/L	1.36 U	1.18 UJ	0.490 U	1.03 U	0.880 J	1.22 U	1.04 U	1.53 U	1.94 U	2.04 U	NS	0.730 U	0.900 U	1.01 U	1.96 U	2.11 U		
1,2,3,4,7,8-HxCDF	70648-26-9	--	pg/L	0.710 U	0.650 U	0.620 U	1.15 U	1.19 U	0.830 U	0.690 U	1.00 U	1.27 U	2.61 U	NS	0.940 U	1.17 U	0.640 U	1.70 U	2.10 U		
1,2,3,6,7,8-HxCDF	57117-44-9	--	pg/L	0.730 U	0.590 U	0.590 U	1.17 U	1.18 U	0.870 U	0.690 U	1.03 U	1.25 U	2.50 U	NS	0.890 U	1.15 U	0.690 U	1.67 U	2.08 U		
1,2,3,7,8,9-HxCDF	72918-21-9	--	pg/L	1.11 U	0.940 U	0.710 U	1.55 U	1.58 U	0.940 U	0.780 U	1.41 U	1.70 U	4.03 U	NS	1.13 U	1.48 U	0.730 U	2.17 U	3.33 U		
2,3,4,6,7,8-HxCDF	60851-34-5	--	pg/L	0.750 U	0.690 U	0.600 U	1.17 U	1.22 U	0.910 U	0.740 U	1.05 U	1.45 U	2.72 U	NS	1.30 J	1.14 U	0.690 U	1.75 U	2.30 U		
1,2,3,4,6,7,8-HpCDF	67562-39-4	--	pg/L	0.660 U	0.770 U	0.550 U	1.01 U	1.18 U	1.11 U	0.930 U	1.27 U	1.31 U	3.03 U	NS	0.820 U	0.840 U	0.940 U	2.37 U	2.73 U		
1,2,3,4,7,8,9-HpCDF	55673-89-7	--	pg/L	0.940 U	1.25 U	0.700 U	1.52 U	1.64 U	1.55 U	1.36 U	2.26 U	2.32 U	5.04 U	NS	1.16 U	1.23 U	1.37 U	4.20 U	4.05 U		
OCDF	39001-02-0	--	pg/L	5.84 UJ	10.2 J	28.9 U	1.96 U	2.36 U	2.20 U	2.37 U	2.82 U	3.86 U	5.50 U	NS	9.61 U	2.61 U	2.52 U	4.68 U	5.27 U		
Dioxin/furan TEQ	--	6.7	pg/L	0.450 UJ	1.39 J	0.560 U	2.10 J	2.15 J	1.31 U	1.43 J	1.67 U	2.05 U	3.49 UJ	NS	1.46 J	1.91 J	1.13 U	2.52 U	4.27 J		

Notes:

-- Not available.

BOLD/RED Analyte detected at a concentration greater than the site CUL.

1 On October 28, 2020, MW-VB2 was dry and samples were unable to be collected.

2 The TEQ is calculated by summing the detected dioxins/furans multiplied by their specific TEF value. Nondetect dioxins/furans use half the resulting value and are added to the sum. If no dioxins/furans were detected, the maximum detection limit after multiplying by the specific TEF value is reported.

Abbreviations:

CAS Chemical Abstracts Service	OCDD Octachlorodibenzo-p-dioxin
CUL Cleanup level	OCDF Octachlorodibenzofuran
HpCDD Heptachlorodibenzo-p-dioxin	PeCDD Pentachlorodibenzo-p-dioxin
HpCDF Heptachlorodibenzofuran	PeCDF Pentachlorodibenzofuran
HxCDD Hexachlorodibenzo-p-dioxin	pg/L Picograms per liter
HxCDF Hexachlorodibenzofuran	TCDD Tetrachlorodibenzo-p-dioxin
µg/L Micrograms per liter	TCDF Tetrachlorodibenzofuran
NS Not sampled	TEF Toxic equivalent factor
NTU Nephelometric turbidity units	TEQ Toxic equivalent

Qualifiers:

J Analyte was detected; concentration is considered to be an estimate.

JQ Analyte was detected between the method detection limit and reporting limit; concentration is considered to be an estimate.

U Analyte was not detected at the given reporting limit.

UJ Analyte was not detected; concentration given is the reporting limit, which is considered to be an estimate.

Table 3.1
Lora Lake Parcel Sediment Confirmation Monitoring Analytical Data

Location Group				Vicinity Wells (cont.)					
Location Name				MW-VB3					
Sample ID				MW-VB3-102720	MW-VB3-031621	MW-VB3-032322	MW-VB3-041323	MW-VB3-042424	MW-VB3-041525
Sample Date				10/27/2020	3/16/2021	3/23/2022	4/13/2023	4/24/2024	4/15/2025
Analyte	CAS No.	Site CUL	Unit						
Field Parameters									
Turbidity	--	--	NTU	4.79	2.33			1.36	2.95
Dissolved Metals by USEPA 200.8									
Arsenic	7440-38-2	5	µg/L	0.45	0.39	0.38	0.38	0.30	0.40
Dioxin/Furans by USEPA 1613B									
2,3,7,8-TCDD	1746-01-6	--	pg/L	1.10 U	0.550 U	1.09 U	0.810 U	1.51 U	1.96 U
1,2,3,7,8-PeCDD	40321-76-4	--	pg/L	0.910 U	0.510 U	1.72 U	1.11 U	3.30 U	4.09 U
1,2,3,4,7,8-HxCDD	39227-28-6	--	pg/L	1.07 U	0.590 U	1.56 U	1.02 U	4.13 U	4.61 U
1,2,3,6,7,8-HxCDD	57653-85-7	--	pg/L	0.960 U	0.580 U	1.43 U	0.950 U	4.21 U	4.85 U
1,2,3,7,8,9-HxCDD	19408-74-3	--	pg/L	1.13 U	0.600 U	1.61 U	1.08 U	4.53 U	5.14 U
1,2,3,4,6,7,8-HpCDD	35822-46-9	--	pg/L	1.74 U	1.25 U	3.18 J	1.67 U	4.61 U	5.22 U
OCDD	3268-87-9	--	pg/L	35.3 UJ	9.72 U	23.9 J	8.28 U	6.29 U	7.38 U
2,3,7,8-TCDF	51207-31-9	--	pg/L	1.29 U	0.660 U	0.980 U	1.15 U	1.87 U	2.89 U
1,2,3,7,8-PeCDF	57117-41-6	--	pg/L	1.63 U	0.680 U	1.04 U	1.20 U	2.14 U	2.08 U
2,3,4,7,8-PeCDF	57117-31-4	--	pg/L	1.47 U	0.620 U	1.03 U	1.08 U	2.12 U	2.10 U
1,2,3,4,7,8-HxCDF	70648-26-9	--	pg/L	0.780 U	0.460 U	1.28 U	0.840 U	1.95 U	2.56 U
1,2,3,6,7,8-HxCDF	57117-44-9	--	pg/L	0.690 U	0.450 U	1.29 U	0.810 U	1.90 U	2.72 U
1,2,3,7,8,9-HxCDF	72918-21-9	--	pg/L	1.15 U	0.570 U	1.65 U	0.990 U	2.64 U	3.99 U
2,3,4,6,7,8-HxCDF	60851-34-5	--	pg/L	0.820 U	0.450 U	1.38 U	0.900 U	2.17 U	2.69 U
1,2,3,4,6,7,8-HpCDF	67562-39-4	--	pg/L	1.35 U	1.24 U	2.17 J	0.930 U	2.09 U	2.84 U
1,2,3,4,7,8,9-HpCDF	55673-89-7	--	pg/L	1.30 U	0.680 U	2.03 U	1.25 U	4.23 U	4.15 UJ
OCDF	39001-02-0	--	pg/L	5.29 J	23.3 U	2.50 U	2.98 U	5.17 U	4.78 U
Dioxin/furan TEQ	--	6.7	pg/L	1.67 J	0.550 U	2.21 J	1.11 U	3.30 U	4.09 UJ

Notes:

-- Not available.

BOLD/RED Analyte detected at a concentration greater than the site CUL.

1 On October 28, 2020, MW-VB2 was dry and samples were unable to be collected.

2 The TEQ is calculated by summing the detected dioxins/furans multiplied by their specific TEF value. Nondetect dioxins/furans use half the resulting value and are added to the sum. If no dioxins/furans were detected, the maximum detection limit after multiplying by the specific TEF value is reported.

Abbreviations:

CAS Chemical Abstracts Service	OCDD Octachlorodibenzo- <i>p</i> -dioxin
CUL Cleanup level	OCDF Octachlorodibenzofuran
HpCDD Heptachlorodibenzo- <i>p</i> -dioxin	PeCDD Pentachlorodibenzo- <i>p</i> -dioxin
HpCDF Heptachlorodibenzofuran	PeCDF Pentachlorodibenzofuran
HxCDD Hexachlorodibenzo- <i>p</i> -dioxin	pg/L Picograms per liter
HxCDF Hexachlorodibenzofuran	TCDD Tetrachlorodibenzo- <i>p</i> -dioxin
µg/L Micrograms per liter	TCDF Tetrachlorodibenzofuran
NS Not sampled	TEF Toxic equivalent factor
NTU Nephelometric turbidity units	TEQ Toxic equivalent

Qualifiers:

J Analyte was detected; concentration is considered to be an estimate.

JQ Analyte was detected between the method detection limit and reporting limit; concentration is considered to be an estimate.

U Analyte was not detected at the given reporting limit.

UJ Analyte was not detected; concentration given is the reporting limit, which is considered to be an estimate.

**Table 3.2
Statistical Summary**

	Sediment Cap Confirmation Vicinity Wells ⁽¹⁾	Sediment Cap Confirmation Monitoring Wells ⁽²⁾	Confirmation Monitoring Wells Excluding MW-CP5
Arsenic			
Sample Count ⁽³⁾	23	42	36
Data Distribution	Nonparametric	Nonparametric	Lognormal (p<0.10)
Minimum (Detects Only)	0.090	0.093	0.093
Median (Detects Only)	0.18	0.45	0.41
Maximum (Detects Only)	0.47	9.8	3.1
Coefficient of Variation	0.51	1.54	1.1
Site Vicinity Background Concentration ⁽⁴⁾	0.40	--	--
ProUCL Recommended 95% UCL Method	--	Student's-t UCL	H Statistic
95% UCL	--	1.5	0.86
Percent of Results Exceeding Site Vicinity Background	--	57%	50%
Dioxin/Furan TEQ			
Sample Count ⁽³⁾	19	42	--
Data Distribution	Normal (p<0.01)	Nonparametric	--
Minimum (Detects Only)	1.39	1.15	--
Median (Detects Only)	1.91	1.86	--
Maximum (Detects Only)	5.45	5.45	--
Coefficient of Variation	0.822	0.521	--
Site Vicinity Background Concentration ⁽⁴⁾	3.15	--	--
ProUCL Recommended 95% UCL Method	--	Kaplan–Meier (t)	--
95% UCL	--	1.39	--
Percent of Results Exceeding Site Vicinity Background	--	10%	--

Notes:

-- Not applicable.

1 Includes wells MW-C1/VB1, MW-VB2, MW-VB3, and HCOO-B312. MW-VB2 was not sampled in the October 2020 monitoring event because the monitoring well was dry.

2 Includes wells MW-CP1, MW-CP2, MW-CP3, MW-CP4, MW-CP5, MW-CP6, and MW-CP7.

3 Field sample duplicate pairs were reduced to the maximum detected result between the two results. If both results were nondetect, the result with the lower method detection limit was used in this analysis.

4 Determined as the 90th percentile of site vicinity wells.

Abbreviations:

TEQ Toxic equivalent

UCL Upper confidence limit

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Figures



Legend

- Groundwater Confirmation Monitoring Location
- ⊕ Sediment Cap Confirmation Monitoring Location
- ⊗ Sediment Cap Confirmation Site Vicinity Monitoring Location
- - - City Boundary
- ▭ Tax Parcel Boundary

Label Key

MW-C3	← Location Name
As:	← Arsenic Result (µg/L)
0.18 J	

Notes:

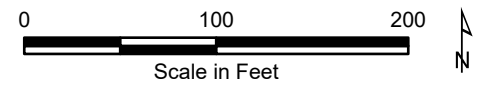
- Per the *Evaluation of Arsenic in Groundwater at the Lora Lake Apartments Site* memorandum (Floyd|Snider 2020) and subsequent Ecology approval, monitoring at MW-C1 and MW-C4 is no longer required for the Lora Lake Apartments Parcel. However, MW-C1 was renamed MW-C1/VB1 in 2020 and monitoring is ongoing because it serves as a vicinity well for the Lora Lake Parcel. Data is presented on Figure 3.1.
 - Results shown in **RED BOLD** exceed the site cleanup level for arsenic of 5 µg/L.
 - All results are from samples collected on 4/15/2025.
 - Analytical results for duplicate samples are not presented.
 - Tax parcel boundaries based on King County tax parcel data.
 - City boundary data provided by King County.
 - Orthoimagery obtained from Nearmap, 2023.

Abbreviations:

- As = Arsenic
- Ecology = Washington State Department of Ecology
- µg/L = Micrograms per liter
- WSDOT = Washington State Department of Transportation

Qualifier:

J = Analyte was detected; concentration is considered to be an estimate.



Legend

- Groundwater Confirmation Monitoring Location
- ⊕ Sediment Cap Confirmation Monitoring Location
- ⊗ Sediment Cap Confirmation Site Vicinity Monitoring Location
- - - City Boundary
- ▭ Tax Parcel Boundary

Label Key

MW-C1/VB1	← Location Name
As: 0.11 J	← Arsenic Result (µg/L)
D/F: 1.31 U	← Dioxin/Furan Result (pg/L)

Notes:

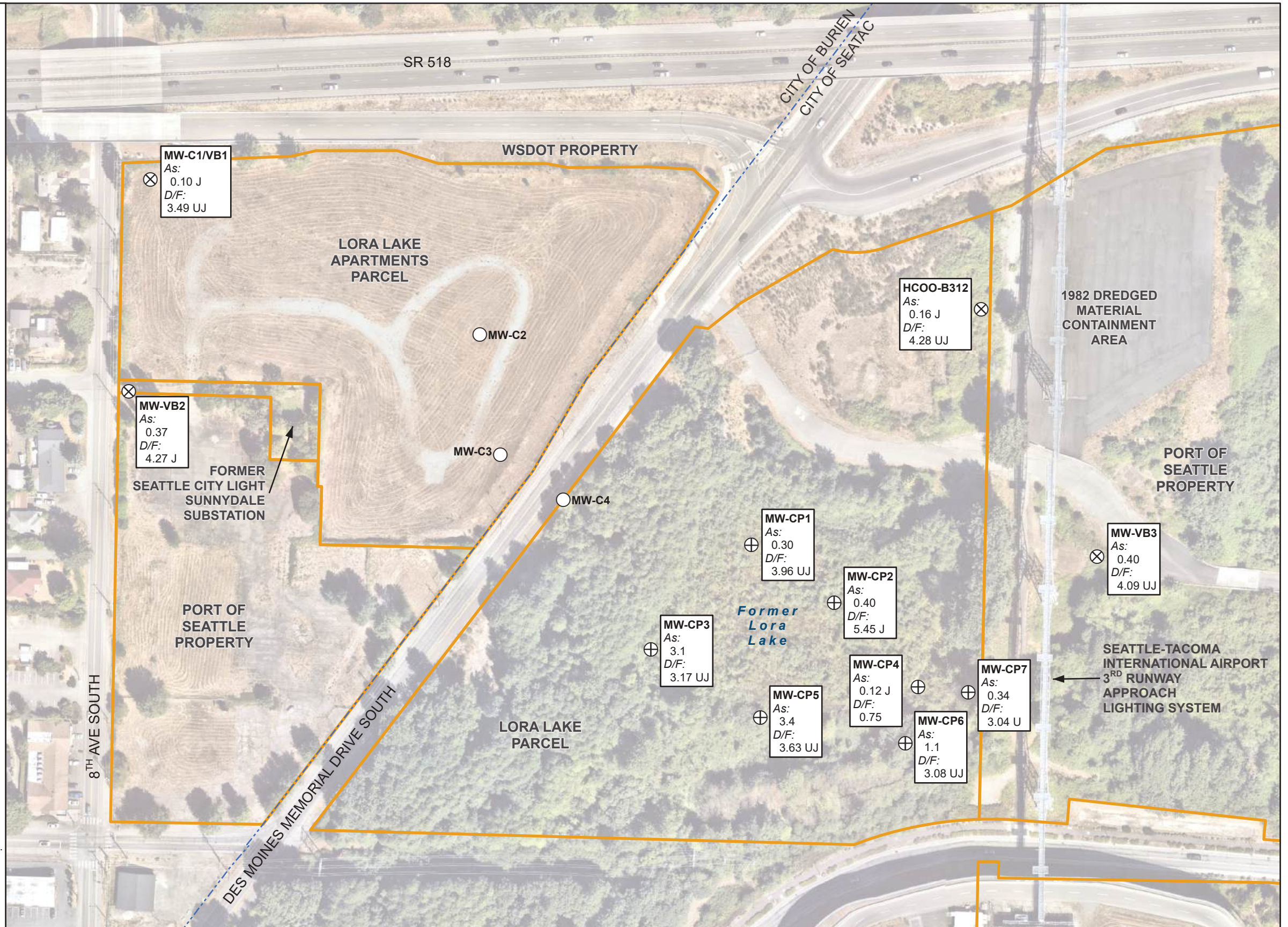
- Cleanup levels for arsenic and dioxins/furans are 5 µg/L and 6.7 pg/L, respectively.
- All results are from samples collected on 4/15/2025 and 4/16/2025.
- Analytical results for duplicate samples are not presented.
- Tax parcel boundaries based on King County tax parcel data.
- City boundary data provided by King County.
- Orthoimagery obtained from Nearmap, 2023.

Abbreviation:

- As = Arsenic
- D/F = Dioxins/Furans
- µg/L = Micrograms per liter
- pg/L = Picograms per liter
- WSDOT = Washington State Department of Transportation

Qualifiers:

- J = Analyte was detected; concentration is considered to be an estimate.
- U = Analyte was not detected at the given reporting limit.
- UJ = Analyte was not detected; concentration given is the reporting limit, which is considered to be an estimate.



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Appendix A
Groundwater Sample Collection Forms

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project: POS - LLA
 Task: 8140

Date of Collection: 04/15/25
 Field Personnel: M.M & C.L

Purge Data

Well ID: MW-C1/VB1 Secure: Yes No Ecology Tag #: _____ Casing Type/Diameter/Screened Interval 2" PVC

Replacement Required: Monument Lid Lock Bolts: Missing (#) _____ Stripped (#) _____ Other Damage: _____

Depth Sounder decontaminated Prior to Placement in Well: Yes No One Casing Volume (gal): _____

Depth of water (from TOC): 9.55' Time: 9:34

Total Depth (from log or field measurement): _____

After 5 minutes of purging (from top of casing): 9.69'

Begin purge (time): 9:34 End purge (time): 10:20

Volume purged: ~52 Purge water disposal method drum

Diameter	O D	I D	Volume (Gal/Linear Ft)	Weight of Water (Lbs/Lineal Ft)
1 1/4"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (ft)	Vol Purged (L)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µs/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
9:42	9.69'	1	6.62	9.05	76.8	2.79	11.1	196.6	
9:47	9.69	2	6.56	9.23	76.1	2.67	11.1	196.2	
9:52	9.69	2.50	6.54	9.36	75.8	3.12	11.0	195.7	
9:57	9.69	3.25	6.52	9.43	75.7	2.79	11.1	195.1	
10:02	9.70	4.25	6.50	9.42	75.7	3.22	11.4	194.5	

Sampling Data

Sample No: MW-C1/VB1-041525 Location and Depth: _____

Date Collected (mo/dy/yr): 04/15/25 Time Collected: 10:10 Weather: Sunny, 50s

Type: Ground Water Surface Water Other: _____ Sample: Filtered Unfiltered Filter Type: _____

Sample Collected with: Bailer Pump Other: _____ Type: Peristaltic Bladder Submersible Other: _____

Water Quality Instrument Data Collected with: Type YSI ProDSS Turbidity Meter Other: _____

Sample Decon Procedure: Sample collected with: decontaminated all tubing; disposable tubing dedicated silicon and poly tubing; dedicated tubing replaced

Sample Description (Color, Turbidity, Odor, Other): clear, no odor

Sample Analyses

Analyte	Analysis Method	Sample Container	Quantity	Preservative	Notes
Dioxins/Furans		1L Amber	2	-	
Diss. Arsenic		500mL Poly	1	-	

QC samples

Duplicate Sample No: _____ Duplicate Time: _____ MS/MSD: Yes No

Signature: [Signature] Date: 04/15/25

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project: POS-LLA
 Task: 8140

Date of Collection: 04/15/25
 Field Personnel: mm & cl

Purge Data

Well ID: MW-02 Secure: Yes No Ecology Tag #: _____ Casing Type/Diameter/Screened Interval 2" PVC

Replacement Required: Monument Lid Lock Bolts Missing (#) _____ Stripped (#) _____ Other Damage: _____

Depth Sounder decontaminated Prior to Placement in Well: Yes No One Casing Volume (gal): _____

Depth of water (from TOC): 15.35' Time: 10:34

Total Depth (from log or field measurement): _____

After 5 minutes of purging (from top of casing): 15.58'

Begin purge (time): 10:35 End purge (time): 11:10

Volume purged: ~6L Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe				
Diameter	O.D.	I.D.	Volume (Gal/Linear Ft)	Weight of Water (Lbs/Linear Ft)
1 1/4"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (ft)	Vol. Purged (L)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µs/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
10:42	15.69'	1	11.29	7.97	322.7	3.92	12.0	127.3	
10:47	15.72	2	11.37	5.68	347.2	3.47	12.1	125.5	
10:52	15.72	2.50	11.36	4.57	353.4	3.32	12.0	163.2	
10:57	15.74	3.50	11.34	3.86	348.7	3.60	12.0	168.9	
11:02	15.75	5	11.32	3.30	349.4	3.67	12.2	170.1	

Sampling Data

Sample No: MW-02-041525 Location and Depth: _____

Date Collected (mo/dy/yr): 04/15/25 Time Collected: 11:05 Weather: Sunny, SDS

Type: Ground Water Surface Water Other: _____ Sample: Filtered Unfiltered Filter Type: _____

Sample Collected with: Bailer Pump Other: _____ Type: Peristaltic Bladder Submersible Other: _____

Water Quality Instrument Data Collected with: Type YSI ProDSS Turbidity Meter Other: _____

Sample Decon Procedure: Sample collected with: decontaminated all tubing, disposable tubing dedicated silicon and poly tubing, dedicated tubing replaced

Sample Description (Color, Turbidity, Odor, Other): clear, no odor, faint yellow tint

Sample Analyses

Analyte	Analysis Method	Sample Container	Quantity	Preservative	Notes
Diss. Arsenic		500ml poly	1	-	

QC samples

Duplicate Sample No: _____ Duplicate Time: _____ MS/MSD: Yes No

Signature: [Signature] Date: 04/15/25

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project: POS-LLA
 Task: 8140

Date of Collection: 04/15/25
 Field Personnel: MM & CL

Purge Data MW-C3

Well ID: MW-03 Secure: Yes No Ecology Tag #: _____ Casing Type/Diameter/Screened Interval _____

Replacement Required: Monument Lid Lock Bolts: Missing (#) _____ Stripped (#) _____ Other Damage: _____

Depth Sounder decontaminated Prior to Placement in Well: Yes No One Casing Volume (gal): _____

Depth of water (from TOC): 17.27 Time: 10:35

Total Depth (from log or field measurement): 25.50

After 5 minutes of purging (from top of casing): 17.27

Begin purge (time): 10:35 End purge (time): 11:10

Volume purged: 5 L Purge water disposal method: drum

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 1/4"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (ft)	Vol Purged	pH (s.u.)	DO (mg/L)	Specific Conductivity (µs/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
10:40	17.27	1	6.15	8.69	92.3	3.72	12.4	196.4	
10:45	17.25	2	6.12	8.70	78.9	3.97	12.4	218.4	
10:50	17.26	3	6.13	8.71	78.3	3.75	12.3	220.4	
10:55	17.26	4	6.14	8.72	78.0	3.67	12.3	218.7	
11:00	17.27	5	6.15	8.71	77.6	3.69	12.3	216.5	

Sampling Data C3

Sample No: MW-03-041525 Location and Depth: _____

Date Collected (mo/dy/yr): 4/15/25 Time Collected: 11:10A Weather: Sunny

Type: Ground Water Surface Water Other: _____ Sample: Filtered Unfiltered Filter Type: _____

Sample Collected with: Bailer Pump Other: _____ Type: Peristaltic Bladder Submersible Other: _____

Water Quality Instrument Data Collected with: Type YSI ProDSS Turbidity Meter Other: _____

Sample Decon Procedure: Sample collected with: decontaminated all tubing; disposable tubing dedicated silicon and poly tubing; dedicated tubing replaced

Sample Description (Color, Turbidity, Odor, Other): clear, no odor

Sample Analyses

Analyte	Analysis Method	Sample Container	Quantity	Preservative	Notes
Diss. Arsenic		500mL poly	2	-	

QC samples

Duplicate Sample No: _____ Duplicate Time: _____ MS/MSD: Yes No

Signature: _____ Date: 4/15/25

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project: POS-LLA
 Task: 8140

Date of Collection: 04/15/25
 Field Personnel: M. McCann & C. Lentz

Purge Data

Well ID: MW-VB2 Secure: Yes No Ecology Tag #: _____ Casing Type/Diameter/Screened Interval 2" PVC

Replacement Required: Monument Lid Lock Bolts: Missing (#) _____ Stripped (#) _____ Other Damage: _____

Depth Sounder decontaminated Prior to Placement in Well: Yes No One Casing Volume (gal): _____

Depth of water (from TOC): 9.86' Time: 8:34

Total Depth (from log or field measurement): _____

After 5 minutes of purging (from top of casing): 9.91'

Begin purge (time): 8:35 End purge (time): 9:25

Volume purged: ~7L Purge water disposal method drum

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 1/4"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (ft)	Vol. Purged (L)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µs/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
8:44	9.92	1	5.97	7.12	1167.6	3.57	11.1	191.1	
8:49	9.93	2	5.99	5.38	1166.1	3.69	11.0	193.3	
8:54	9.89	3	6.01	4.35	1164.9	3.47	11.0	191.0	
8:59	9.89	4	6.01	3.84	1163.9	3.68	11.0	190.1	
9:04	9.87	5	6.01	3.42	1163.1	3.39	11.1	189.1	
9:09	9.88	6	6.02	3.17	1162.5	3.22	11.0	188.5	

Sampling Data

Sample No: MW-VB2-041525 Location and Depth: LLA

Date Collected (mo/dy/yr): 04/15/25 Time Collected: 9:15 Weather: Sunny, 50s

Type: Ground Water Surface Water Other: _____ Sample: Filtered Unfiltered Filter Type: _____

Sample Collected with: Bailer Pump Other: _____ Type: Peristaltic Bladder Submersible Other: _____

Water Quality Instrument Data Collected with: Type: YSI ProDSS Turbidity Meter Other: _____

Sample Decon Procedure: Sample collected with: decontaminated all tubing; disposable tubing dedicated silicon and poly tubing; dedicated tubing replaced

Sample Description (Color, Turbidity, Odor, Other): clear,

Sample Analyses

Analyte	Analysis Method	Sample Container	Quantity	Preservative	Notes
Dioxins/Furans		1L Amber	2	-	
Diss. Arsenic		500mL poly	1	-	

QC samples

Duplicate Sample No: _____ Duplicate Time: _____ MS/MSD: Yes No

Signature: [Signature] Date: 04/15/25

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project: POS-LLA
 Task: _____

Date of Collection: 4/15/25
 Field Personnel: cl

Purge Data

Well ID: MW-VB3 Secure: Yes No Ecology Tag #: _____ Casing Type/Diameter/Screened Interval _____

Replacement Required: Monument Lid Lock Bolts: Missing (#) _____ Stripped (#) _____ Other Damage: _____

Depth Sounder decontaminated Prior to Placement in Well: Yes No One Casing Volume (gal): _____

Depth of water (from TOC): 10.25 Time: 15:50

Total Depth (from log or field measurement): _____

After 5 minutes of purging (from top of casing): 10.28

Begin purge (time): 15:50 End purge (time): 16:30

Volume purged: 6.5 Purge water disposal method: drum

Diameter	O D	I D	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Linear Ft.)
1 1/2"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (ft)	Vol. Purged (L)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µs/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
15:55	10.28	1	5.82	1.02	240.1	2.96	12.3	176.1	
16:00	10.28	2	5.83	0.60	237.0	3.13	12.2	177.2	
16:05	10.28	3	5.84	0.53	236.2	2.75	12.1	176.5	
16:10	10.28	4	5.84	0.45	234.8	3.06	12.2	175.0	
16:15	10.28	5	5.84	0.42	234.0	3.05	12.3	174.0	
16:20	10.28	6	5.84	0.40	234.3	2.95	12.2	172.9	

Sampling Data

Sample No: MW-VB3-041525 Location and Depth: _____

Date Collected (mo/dy/yr): 4/15/25 Time Collected: 16:25 Weather: Sunny

Type: Ground Water Surface Water Other: _____ Sample Filtered Unfiltered Filter Type: _____

Sample Collected with: Bailer Pump Other: _____ Type: Peristaltic Bladder Submersible Other: _____

Water Quality Instrument Data Collected with: Type: YSI ProDSS Turbidity Meter Other: _____

Sample Decon Procedure: Sample collected with: decontaminated all tubing; disposable tubing dedicated silicon and poly tubing; dedicated tubing replaced

Sample Description (Color, Turbidity, Odor, Other): clear no odor

Sample Analyses

Analyte	Analysis Method	Sample Container	Quantity	Preservative	Notes
		1L amber	2	-	
		500ml poly		-	

QC samples

Duplicate Sample No: _____ Duplicate Time: _____ MS/MSD: Yes No

Signature: _____ Date: 4/15/25

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project: POS-LL
 Task: 8140

Date of Collection: 04/15/25
 Field Personnel: m. mccann

Purge Data

Well ID: H000-B312 Secure: Yes No Ecology Tag #: _____ Casing Type/Diameter/Screened Interval: 2" PVC

Replacement Required: Monument Lid Lock Bolts: Missing (#) 1 Stripped (#) _____ Other Damage: _____

Depth Sounder decontaminated Prior to Placement in Well: Yes No One Casing Volume (gal): _____

Depth of water (from TOC): 11.73' Time: 15:27

Total Depth (from log or field measurement): _____

After 5 minutes of purging (from top of casing): 11.73'

Begin purge (time): 15:27 End purge (time): 16:15

Volume purged: ~7L Purge water disposal method: drum

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 1/2"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (ft)	Vol Purged (L)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µs/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
15:34	11.73'	~.75	7.28	6.63	194.5	4.56	12.3	155.0	
15:39	11.75	2	6.36	4.75	194.7	3.93	12.0	162.1	
15:44	11.76	3	6.13	3.87	192.6	3.71	12.0	171.5	
15:49	11.77	4	6.06	3.35	190.5	4.20	12.2	176.4	
15:54	11.75	5	6.03	2.92	188.0	4.57	12.2	177.5	
15:59	11.75	6	6.01	2.73	186.8	3.85	12.0	169.3	

Sampling Data

Sample No: H000-B312-041525 Location and Depth: _____

Date Collected (mo/dy/yr): 04/15/25 Time Collected: 16:05 Weather: sunny, cool

Type: Ground Water Surface Water Other: _____ Sample: Filtered Unfiltered Filter Type: _____

Sample Collected with: Bailer Pump Other: _____ Type: Peristaltic Bladder Submersible Other: _____

Water Quality Instrument Data Collected with: Type: YSI ProDSS Turbidity Meter Other: _____

Sample Decon Procedure: Sample collected with: decontaminated all tubing, disposable tubing, dedicated silicon and poly tubing, dedicated tubing replaced

Sample Description (Color, Turbidity, Odor, Other): clear, no odor

Sample Analyses

Analyte	Analysis Method	Sample Container	Quantity	Preservative	Notes
Dioxins/Furans		1L Amber	2	-	
Diss. Arsenic		500mL poly	1	-	

QC samples

Duplicate Sample No: _____ Duplicate Time: _____ MS/MSD: Yes No

Signature: [Signature] Date: 04/15/25

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project: POS-60A
 Task: _____

Date of Collection: 4/16/25
 Field Personnel: el

Purge Data

Well ID: MW-CPI Secure: Yes No Ecology Tag #: _____ Casing Type/Diameter/Screened Interval: _____

Replacement Required: Monument Lid Lock Bolts Missing (#) _____ Stripped (#) _____ Other Damage: _____

Depth Sounder decontaminated Prior to Placement in Well: Yes No One Casing Volume (gal): _____

Depth of water (from TOC): 2.35 Time: 12:25

Total Depth (from log or field measurement): _____

After 5 minutes of purging (from top of casing): 2.35

Begin purge (time): 12:25 End purge (time): _____

Volume purged: _____ Purge water disposal method: _____

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Linear Ft.)
1 1/4"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (ft)	Vol Purged (L)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µs/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
12:30	2.35	1	6.48	1.98	175.0	3.15	11.3	134.3	
12:35	2.38	2	6.42	0.89	178.2	3.17	11.3	135.8	
12:40	2.37	3	6.42	0.66	179.1	3.03	11.4	133.4	
12:45	2.38	4	6.42	0.51	178.7	2.96	11.3	130.0	
12:50	2.38	5	6.42	0.47	178.0	3.04	11.2	128.1	
12:55	2.38	6	6.43	0.41	177.4		11.2	128.8	

Sampling Data

Sample No: MW-CPI-04/16/25 Location and Depth: _____

Date Collected (mo/dy/yr): 4/16/25 Time Collected: 13:15 Weather: _____

Type: Ground Water Surface Water Other: _____ Sample: Filtered Unfiltered Filter Type: _____

Sample Collected with: Bailer Pump Other: _____ Type: Peristaltic Bladder Submersible Other: _____

Water Quality Instrument Data Collected with: Type: YSI ProDSS Turbidity Meter Other: _____

Sample Decon Procedure: Sample collected with: decontaminated all tubing disposable tubing dedicated silicon and poly tubing dedicated tubing replaced

Sample Description (Color, Turbidity, Odor, Other): clear, no odor

Sample Analyses

Analyte	Analysis Method	Sample Container	Quantity	Preservative	Notes
		12 amber	2	-	
		500 ml poly	1	-	

QC samples

Duplicate Sample No: MW-CPI-04/16/25-D Duplicate Time: 13:30 MS/MSD: Yes No

Signature: _____ Date: 4/16/25

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project: POS-LLA
 Task: _____

Date of Collection: 4/16/25
 Field Personnel: el

Purge Data

Well ID: MW-CP2 Secure Yes No Ecology Tag # _____ Casing Type/Diameter/Screened Interval _____

Replacement Required: Monument Lid Lock Bolts Missing (#) _____ Stripped (#) _____ Other Damage: _____

Depth Sounder decontaminated Prior to Placement in Well: Yes No One Casing Volume (gal): _____

Depth of water (from TOC): 2.90 Time: 11:10

Total Depth (from log or field measurement): _____

After 5 minutes of purging (from top of casing): 2.90

Begin purge (time): 11:10 End purge (time): 12:10

Volume purged: 9L Purge water disposal method: drum

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 1/4"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (ft)	Vol. Purged (L)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µs/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
11:20	2.90	1	7.07	4.72	87.5	3.17	10.8	51.3	
11:25	2.90	2	6.79	1.80	84.3	2.79	10.5	82.3	slowed pump
11:30	2.89	3	6.71	1.39	84.1	2.61	10.7	89.4	
11:35	2.89	4	6.67	1.08	83.8	2.71	10.7	93.1	
11:40	2.90	5	6.64	1.02	83.7	2.80	10.7	96.8	
11:45	2.90	6	6.62	0.79	83.7	2.62	10.7	98.2	
11:50	2.90	7	6.60	0.63	83.4	2.42	10.7	99.8	
11:55	2.90	8	6.59	0.59	83.3	2.44	10.7	100.6	

Sampling Data

Sample No: MW-CP2-041625 Location and Depth: _____

Date Collected (mo/dy/yr): 4/16/25 Time Collected: 12:00 Weather: sunny

Type: Ground Water Surface Water Other: _____ Sample: Filtered Unfiltered Filter Type: _____

Sample Collected with: Bailer Pump Other: _____ Type: Peristaltic Bladder Submersible Other: _____

Water Quality Instrument Data Collected with: Type: YSI ProDSS Turbidity Meter Other: _____

Sample Decon Procedure: Sample collected with: decontaminated all tubing; disposable tubing dedicated silicon and poly tubing; dedicated tubing replaced

Sample Description (Color, Turbidity, Odor, Other): _____

Sample Analyses

Analyte	Analysis Method	Sample Container	Quantity	Preservative	Notes
		1x amber 500ml poly	2	-	

QC samples

Duplicate Sample No: _____ Duplicate Time: _____ MS/MSD: Yes No

Signature: _____ Date: 4/16/25

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project: POS-LLA
 Task: 8140

Date of Collection: 04/16/25
 Field Personnel: m. McCann

Purge Data

Well ID: MW-CP3 Secure: Yes No Ecology Tag #: _____ Casing Type/Diameter/Screened Interval: 2" PVC

Replacement Required: Monument Lid Lock Bolts Missing (#) _____ Stripped (#) _____ Other Damage: _____

Depth Sounder decontaminated Prior to Placement in Well: Yes No One Casing Volume (gal): _____

Depth of water (from TOC): 2.34' Time: 15:26

Total Depth (from log or field measurement): _____

After 5 minutes of purging (from top of casing): 2.33'

Begin purge (time): 15:26 End purge (time): 16:15

Volume purged: ~6L Purge water disposal method: drum

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 1/4"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (ft)	Vol. Purged (L)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µs/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
15:35	2.34'	1	6.64	5.42	207.5	2.47	10.5	181.8	
15:40	2.34	2	6.62	3.14	203.9	2.29	10.4	179.9	
15:45	2.34	3	6.61	2.28	201.9	2.50	10.3	178.0	
15:50	2.35	4	6.62	1.89	201.1	2.55	10.3	177.0	
15:55	2.35	5	6.62	1.71	200.1	2.37	10.2	176.3	

Sampling Data

Sample No: MW-CP3-04/16/25 Location and Depth: _____

Date Collected (mo/dy/yr): 04/16/25 Time Collected: 16:05 Weather: Sunny, 70°

Type: Ground Water Surface Water Other: _____ Sample: Filtered Unfiltered Filter Type: _____

Sample Collected with: Bailor Pump Other: _____ Type: Peristaltic Bladder Submersible Other: _____

Water Quality Instrument Data Collected with: Type: YSI ProDSS Turbidity Meter Other: _____

Sample Decon Procedure: Sample collected with: decontaminated all tubing, disposable tubing dedicated silicon and poly tubing, dedicated tubing replaced

Sample Description (Color, Turbidity, Odor, Other): _____

Sample Analyses

Analyte	Analysis Method	Sample Container	Quantity	Preservative	Notes
<u>DIUXINS / Furals</u>		<u>16 Amber</u>	<u>2</u>	<u>-</u>	
<u>Dist. Arsenic</u>		<u>500mL poly</u>	<u>1</u>	<u>-</u>	

QC samples

Duplicate Sample No: _____ Duplicate Time: _____ MS/MSD: Yes No

Signature: [Signature] Date: 04/16/25

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project: POS-LL
 Task: 8140

Date of Collection: 04/16/25
 Field Personnel: m. mccam

Purge Data

Well ID: MW-CP4 Secure: Yes No Ecology Tag #: _____ Casing Type/Diameter/Screened Interval: 2" PVC

Replacement Required: Monument Lid Lock Bolts Missing (#) _____ Stripped (#) _____ Other Damage: _____

Depth Sounder decontaminated Prior to Placement in Well: Yes No One Casing Volume (gal): _____

Depth of water (from TOC): 1.27' Time: 11:12

Total Depth (from log or field measurement): _____

After 5 minutes of purging (from top of casing): 1.28'

Begin purge (time): 11:12 End purge (time): 11:55

Volume purged: ~7L Purge water disposal method: drum

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 1/4"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (ft)	Vol. Purged (L)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µs/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
11:20	1.28	2	6.40	4.42	207.7	2.94	11.3	179.2	
11:25	1.27	3	6.53	2.90	202.4	3.06	11.2	179.8	
11:30	1.28	4	6.52	2.36	201.2	3.98	11.1	180.4	
11:35	1.28	5	6.52	1.89	199.5	4.37	11.1	180.3	well under ~3' water
11:40	1.27	6	6.57	1.61	199.1	4.76	11.1	180.1	(need waders!)

Sampling Data

Sample No: MW-CP4-041625 Location and Depth: _____

Date Collected (mo/dy/yr): 04/16/25 Time Collected: 11:45 Weather: Sunny, 60s

Type: Ground Water Surface Water Other: _____ Sample: Filtered Unfiltered Filter Type: _____

Sample Collected with: Bailor Pump Other: _____ Type: Peristaltic Bladder Submersible Other: _____

Water Quality Instrument Data Collected with: Type: YSI ProDSS Turbidity Meter Other: _____

Sample Decon Procedure: Sample collected with: decontaminated all tubing; disposable tubing dedicated silicon and poly tubing; dedicated tubing replaced

Sample Description (Color, Turbidity, Odor, Other): clear, no odor

Sample Analyses

Analyte	Analysis Method	Sample Container	Quantity	Preservative	Notes
Dioxins/Furans		1L Amber	2	-	
Diss. Arsenic		500mL Poly	1	-	

QC samples

Duplicate Sample No: _____ Duplicate Time: _____ MS/MSD: Yes No

Signature: [Signature] Date: 04/16/25

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project: POS-LLA
 Task: _____

Date of Collection: 4/16/25
 Field Personnel: u

Purge Data

Well ID: MW-CPS Secure: Yes No Ecology Tag #: _____ Casing Type/Diameter/Screened Interval: _____

Replacement Required: Monument Lid Lock Bolts Missing (#) _____ Stripped (#) _____ Other Damage: _____

Depth Sounder decontaminated Prior to Placement in Well: Yes No One Casing Volume (gal): _____

Depth of water (from TOC): 2.54 Time: 15:13

Total Depth (from log or field measurement): _____

After 5 minutes of purging (from top of casing): 3.05

Begin purge (time): 15:15 End purge (time): _____

Volume purged: _____ Purge water disposal method: drum

Diameter	O.D	I.D	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 1/4"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (ft)	Vol. Purged (L)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µs/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
15:23	3.18	1	6.34	1.24	248.5	7.20	10.1	82.5	
15:28	3.22	2	6.34	0.58	238.9	5.43	10.0	55.2	
15:33	3.26	3	6.35	0.47	235.3	5.67	9.8	34.2	
15:38	3.32	4	6.35	0.40	233.4	4.78	9.8	16.4	
15:43	3.26	5	6.35	0.36	233.4	5.75	9.8	4.5	
15:48	3.28	6	6.35	0.34	232.9	54.97	9.8	-0.8	
15:53	3.27	7	6.35	0.32	233.1	5.85	9.8	-8.7	

Sampling Data

Sample No: MW-CPS-041625 Location and Depth: _____

Date Collected (mo/dy/yr): 4/16/25 Time Collected: 16:10 Weather: sunny

Type: Ground Water Surface Water Other: _____ Sample: Filtered Unfiltered Filter Type: _____

Sample Collected with: Bailer Pump Other: _____ Type: Peristaltic Bladder Submersible Other: _____

Water Quality Instrument Data Collected with: Type YSI ProDSS Turbidity Meter Other: _____

Sample Decon Procedure: Sample collected with decontaminated all tubing; disposable tubing dedicated silicon and poly tubing; dedicated tubing replaced

Sample Description (Color, Turbidity, Odor, Other): _____

Sample Analyses

Analyte	Analysis Method	Sample Container	Quantity	Preservative	Notes
		1L amber	2		
		500ml poly	1		

QC samples

Duplicate Sample No: _____ Duplicate Time: _____ MS/MSD: Yes No

Signature: _____ Date: _____

Red silt/clay caked onto the dedicated silicone tubing plus ~8 inches of the dedicated poly tubing. Some red silt/clay expelled during first 5 min of purging.

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project: POS-LL
 Task: 8140

Date of Collection: 04/16/25
 Field Personnel: m. mccann

Purge Data

Well ID: MW-CP6 Secure: Yes No Ecology Tag #: _____ Casing Type/Diameter/Screened Interval 2" PVC

Replacement Required: Monument Lid Lock Bolts: Missing (#) _____ Stripped (#) _____ Other Damage: _____

Depth Sounder decontaminated Prior to Placement in Well: Yes No One Casing Volume (gal): _____

Depth of water (from TOC): 2.60' Time: 12:08

Total Depth (from log or field measurement): _____

After 5 minutes of purging (from top of casing): 2.75'

Begin purge (time): 12:08 End purge (time): 12:55

Volume purged: ~86 Purge water disposal method drum

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft)	Weight of Water (Lbs/Lineal Ft.)
1 1/2"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (ft)	Vol. Purged (L)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µs/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
12:15	2.76	1.75	6.65	4.61	132.7	17.3	11.0	181.9	
12:20	2.76	2.50	6.59	2.93	131.5	13.9	11.0	178.7	
12:25	2.77	3.75	6.58	2.21	130.7	6.97	11.0	176.0	
12:30	2.73	4.75	6.58	1.84	130.9	6.50	11.0	174.4	
12:35	2.74	6.25	6.58	1.52	130.4	6.74	11.0	173.0	

Sampling Data

Sample No: MW-CP6-041625 Location and Depth: _____

Date Collected (mo/dy/yr): 04/16/25 Time Collected: 12:40 Weather: Sunny, 70°

Type: Ground Water Surface Water Other: _____ Sample: Filtered Unfiltered Filter Type: _____

Sample Collected with: Bailer Pump Other: _____ Type: Peristaltic Bladder Submersible Other: _____

Water Quality Instrument Data Collected with: Type: YSI ProDSS Turbidity Meter Other: _____

Sample Decon Procedure: Sample collected with: decontaminated all tubing; disposable tubing dedicated silicon and poly tubing; dedicated tubing replaced

Sample Description (Color, Turbidity, Odor, Other): clear, faint yellow tint, no odor, some orange flocculant

Sample Analyses

Analyte	Analysis Method	Sample Container	Quantity	Preservative	Notes
Dioxins/Furans		16 Amber	2	-	
Diss. Arsenic		500ml poly	1	-	

QC samples

Duplicate Sample No: _____ Duplicate Time: _____ MS/MSD: Yes No

Signature: [Signature] Date: 04/16/25

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project: POS-LLA
 Task: 8140

Date of Collection: 04/16/25
 Field Personnel: m. meann

Purge Data

Well ID: MW-CP7 Secure: Yes No Ecology Tag #: _____ Casing Type/Diameter/Screened Interval: 2" PVC

Replacement Required: Monument Lid Lock Bolts Missing (#) _____ Stripped (#) _____ Other Damage: _____

Depth Sounder decontaminated Prior to Placement in Well: Yes No One Casing Volume (gal): _____

Depth of water (from TOC): 3.95' Time: 13:37

Total Depth (from log or field measurement): _____

After 5 minutes of purging (from top of casing): 3.97'

Begin purge (time): 13:37 End purge (time): 14:20

Volume purged: 7.5L Purge water disposal method: drum

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 1/2"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (ft)	Vol. Purged (L)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µs/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
13:45	3.97	1.75	6.25	5.41	172.2	2.68	12.4	180.0	
13:50	3.97	3	6.16	3.36	171.4	2.50	12.4	178.9	
13:55	3.98	4	6.15	2.61	170.3	2.06	12.4	178.2	
14:00	3.99	5.50	6.14	2.28	169.5	2.09	12.5	178.1	
14:05	4.00	7	6.14	2.11	168.9	2.41	12.4	178.1	

Sampling Data

Sample No: MW-CP7-041625 Location and Depth: _____

Date Collected (mo/dy/yr): 04/16/25 Time Collected: 14:10 Weather: sunny, 70s

Type: Ground Water Surface Water Other: _____ Sample: Filtered Unfiltered Filter Type: _____

Sample Collected with: Bailer Pump Other: _____ Type: Peristaltic Bladder Submersible Other: _____

Water Quality Instrument Data Collected with: Type: YSI ProDSS Turbidity Meter Other: _____

Sample Decon Procedure: Sample collected with: decontaminated all tubing disposable tubing dedicated silicon and poly tubing; dedicated tubing replaced

Sample Description (Color, Turbidity, Odor, Other): clear, no odor

Sample Analyses

Analyte	Analysis Method	Sample Container	Quantity	Preservative	Notes
Dioxins/Furans		1L Amber	2	-	
Diss. Arsenic		500ml poly	1	-	

QC samples

Duplicate Sample No: _____ Duplicate Time: _____ MS/MSD: Yes No

Signature: [Signature] Date: 04/16/25

Lora Lake Apartments Site
2025 Annual Compliance
Monitoring Report

Appendix B
Laboratory Reports and
Data Validation Summaries



Analytical Resources, LLC
Analytical Chemists and Consultants
Tukwila, WA

09 May 2025

Amanda McKay
 Floyd - Snider
 601 Union Street Two Union Square, Suite 600
 Seattle, WA 98101-2341

RE: Lora Lake 2025

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.

<u>Associated Work Order(s)</u>	<u>Associated SDG ID(s)</u>
25D0382	N/A

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

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

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

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



Chain of Custody Record & Laboratory Analysis Request



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

ARI Assigned Number: 25D0382	Turn-around Requested: Standard	Page: 1 of 2
ARI Client Company: Floyd Snider	Phone: (206) 292-2078	Date: 4/17/25
Client Contact: Amanda McKay	amanda.mckay@floydSnider.com	Ice Present?
Client Project Name: POS-LLA	labdata@floydSnider.com	No. of Coolers: 4
Client Project #:	Samplers: Meg McCann, Charlie Lentz	Cooler Temps: 0.4, 6.0, 0.5

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested				Notes/Comments
					Dissolved	Arsenic	Dioxins/ Furans		
MW-VB2-041525	04/15/25	9:15	GW	3	X	X			As samples to be lab filtered and preserved
MW-C1/VB1-041525		10:10	GW	3	X	X			
MW-C2-041525		11:05	GW	1	X				
MW-C3-041525		11:10	GW	1	X				
HC00-B312-041525		16:05	GW	3	X	X			
MW-VB3-041525		16:25	GW	3	X	X			
MW-CP4-041625	04/16/25	11:45	GW	3	X	X			
MW-CP2-041625		12:00	GW	3	X	X			
MW-CP6-041625		12:40	GW	3	X	X			
MW-CP1-041625		13:15	GW	3	X	X			

Comments/Special Instructions	Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Meg McCann	Printed Name: Sydney Acevedo	Printed Name:	Printed Name:
	Company: Floyd Snider	Company: ARLLC	Company:	Company:
	Date & Time: 04/17/25 @	Date & Time: 4/17/25 0833	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, notwithstanding any provision to the contrary in any contract, purchase order or 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.

Chain of Custody Record & Laboratory Analysis Request



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

ARI Assigned Number: 2500382	Turn-around Requested: Standard	Page: 2 of 2
ARI Client Company: Floyd Snider	Phone: (206) 292-2078	Date: 04/17/25
Client Contact: Amanda McKay	amanda.mckay@floydSnider.com	Ice Present? <input type="checkbox"/>
Client Project Name: POS-LLA		No. of Coolers: 4
Client Project #:	Samplers: meg mccann charlie lentz	Cooler Temps: 0.4, 6.0, 0.5, 2.3

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested				Notes/Comments
					DISSOLVED ARSENIC	DIOXINS / FURANS			
MW-CPI-041625-D	04/16/25	13:30	GW	3	X	X			As samples to be lab filtered and preserved
MW-CP7-041625	↓	14:10	GW	3	X	X			
MW-CP3-041625		16:05	GW	3	X	X			
MW-CP5-041625		16:10	GW	3	X	X			

Comments/Special Instructions	Relinquished by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Relinquished by:	Received by:
	(Signature)	(Signature)	(Signature)	(Signature)
	Printed Name: meg mccann	Printed Name: Sydni Acevedo	Printed Name:	Printed Name:
	Company: Floyd Snider	Company: ARLLC	Company:	Company:
	Date & Time: 04/17/25	Date & Time: 4/17/25 0833	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, notwithstanding 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.



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-VB2-041525	25D0382-01	Water	15-Apr-2025 09:15	17-Apr-2025 08:33
MW-C1/VB1-041525	25D0382-02	Water	15-Apr-2025 10:10	17-Apr-2025 08:33
MW-C2-041525	25D0382-03	Water	15-Apr-2025 11:05	17-Apr-2025 08:33
MW-C3-041525	25D0382-04	Water	15-Apr-2025 11:10	17-Apr-2025 08:33
HC00-B312-041525	25D0382-05	Water	15-Apr-2025 16:05	17-Apr-2025 08:33
MW-VB3-041525	25D0382-06	Water	15-Apr-2025 16:25	17-Apr-2025 08:33
MW-CP4-041625	25D0382-07	Water	16-Apr-2025 11:45	17-Apr-2025 08:33
MW-CP2-041625	25D0382-08	Water	16-Apr-2025 12:00	17-Apr-2025 08:33
MW-CP6-041625	25D0382-09	Water	16-Apr-2025 12:40	17-Apr-2025 08:33
MW-CP1-041625	25D0382-10	Water	16-Apr-2025 13:15	17-Apr-2025 08:33
MW-CP1-041625-D	25D0382-11	Water	16-Apr-2025 13:30	17-Apr-2025 08:33
MW-CP7-041625	25D0382-12	Water	16-Apr-2025 14:10	17-Apr-2025 08:33
MW-CP3-041625	25D0382-13	Water	16-Apr-2025 16:05	17-Apr-2025 08:33
MW-CP5-041625	25D0382-14	Water	16-Apr-2025 16:10	17-Apr-2025 08:33



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

Work Order Case Narrative

Client: Floyd - Snider

Project: Lora Lake 2025

Work Order: 25D0382

Sample receipt

Samples as listed on the preceding page were received 17-Apr-2025 08:33 under ARI work order 25D0382. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Dissolved Metals - EPA Method 6020B

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

Initial and continuing calibrations including interference checks were within method requirements for reported elements.

The method blank(s) contained OCDD, 2,3,7,8-TCDD, 1,2,3,7,8-PECDD, and 1,2,3,4,7,8,9-HpCDF. Samples that contain analyte have been flagged with a "B" qualifier.

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

Dioxin/Furans - EPA Method 1613

The sample(s) were extracted and analyzed within the recommended holding times. Analysis was performed using an application specific column developed by Restek. The RTX-Dioxin2 column has unique isomer separation for the 2378-TCDF, eliminating the need for confirmation analysis.

Initial and continuing calibrations were within method requirements.

Labeled internal standard areas were within limits.

The cleanup surrogate percent recoveries were within control limits.

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

The OPR (Ongoing Precision and Recovery) standard percent recoveries were within control limits.

The reference material (SRM) percent recoveries were within control limits.

The duplicate (DUP) relative percent difference (RPD) were within advisory control limits.



WORK ORDER

25D0382

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

Client: Floyd - Snider	Project Manager: Kelly Bottem
Project: Lora Lake 2025	Project Number: [none]

Preservation Confirmation

Container ID	Container Type	pH	pH Paper Lot#: <u>N000119</u>
25D0382-01 A	Glass NM, Amber, 1000 mL		
25D0382-01 B	Glass NM, Amber, 1000 mL		
25D0382-01 C	HDPE NM, 500 mL	> 2 FAIL	
25D0382-02 A	Glass NM, Amber, 1000 mL		
25D0382-02 B	Glass NM, Amber, 1000 mL		
25D0382-02 C	HDPE NM, 500 mL	> 2 FAIL	
25D0382-03 A	HDPE NM, 500 mL	> 2 FAIL	
25D0382-04 A	HDPE NM, 500 mL	> 2 FAIL	
25D0382-05 A	Glass NM, Amber, 1000 mL		
25D0382-05 B	Glass NM, Amber, 1000 mL		
25D0382-05 C	HDPE NM, 500 mL	> 2 FAIL	
25D0382-06 A	Glass NM, Amber, 1000 mL		
25D0382-06 B	Glass NM, Amber, 1000 mL		
25D0382-06 C	HDPE NM, 500 mL	> 2 FAIL	
25D0382-07 A	Glass NM, Amber, 1000 mL		
25D0382-07 B	Glass NM, Amber, 1000 mL		
25D0382-07 C	HDPE NM, 500 mL	> 2 FAIL	
25D0382-08 A	Glass NM, Amber, 1000 mL		
25D0382-08 B	Glass NM, Amber, 1000 mL		
25D0382-08 C	HDPE NM, 500 mL	> 2 FAIL	
25D0382-09 A	Glass NM, Amber, 1000 mL		
25D0382-09 B	Glass NM, Amber, 1000 mL		
25D0382-09 C	HDPE NM, 500 mL	> 2 FAIL	
25D0382-10 A	Glass NM, Amber, 1000 mL		
25D0382-10 B	Glass NM, Amber, 1000 mL		
25D0382-10 C	HDPE NM, 500 mL	> 2 FAIL	
25D0382-11 A	Glass NM, Amber, 1000 mL		
25D0382-11 B	Glass NM, Amber, 1000 mL		
25D0382-11 C	HDPE NM, 500 mL	> 2 FAIL	
25D0382-12 A	Glass NM, Amber, 1000 mL		
25D0382-12 B	Glass NM, Amber, 1000 mL		
25D0382-12 C	HDPE NM, 500 mL	> 2 FAIL	
25D0382-13 A	Glass NM, Amber, 1000 mL		
25D0382-13 B	Glass NM, Amber, 1000 mL		



WORK ORDER

25D0382

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

Client: Floyd - Snider		Project Manager: Kelly Bottem
Project: Lora Lake 2025		Project Number: [none]
25D0382-13 C	HDPE NM, 500 mL	<i>>Z FAIL</i>
25D0382-14 A	Glass NM, Amber, 1000 mL	
25D0382-14 B	Glass NM, Amber, 1000 mL	
25D0382-14 C	HDPE NM, 500 mL	<i>>Z FAIL</i>

JA for LM
Preservation Confirmed By

4/17/25
Date

Cooler Receipt Form

ARI Client: Floyd Snider

Project Name: POS-LLA

COC No(s): _____ (NA)

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

Assigned ARI Job No: 25P0382

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) Time 0833 0.4 6.6 0.5 2.3 Temp Gun ID#: 9708

Was a temperature blank included in the cooler? YES NO

Were coolers received between 0°- 6° (°C) YES NO

Was sufficient ice used (if appropriate)? NA YES NO

Cooler Accepted by: SA Date: 4/17/25 Time: 0833

Complete custody forms and attach all shipping documents

Log-In Phase:

What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block N/A Other: _____

Are any samples that were out of temperature compliance documented in LIMS? 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: [Signature] Date: 04/17/25 Time: 1135 Labels checked by: [Signature]

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

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____



WORK ORDER

25D0382

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

Client: Floyd - Snider

Project Manager: Kelly Bottem

Project: Lora Lake 2025

Project Number: [none]

Preservation Confirmation

Container ID	Container Type	pH	pH Paper Lot#: <u>N000119</u>
25D0382-01 A	Glass NM, Amber, 1000 mL		
25D0382-01 B	Glass NM, Amber, 1000 mL		
25D0382-01 C	HDPE NM, 500 mL	> 2 FAIL	①
25D0382-02 A	Glass NM, Amber, 1000 mL		
25D0382-02 B	Glass NM, Amber, 1000 mL		
25D0382-02 C	HDPE NM, 500 mL	> 2 FAIL	①
25D0382-03 A	HDPE NM, 500 mL	> 2 FAIL	①
25D0382-04 A	HDPE NM, 500 mL	> 2 FAIL	①
25D0382-05 A	Glass NM, Amber, 1000 mL		
25D0382-05 B	Glass NM, Amber, 1000 mL		
25D0382-05 C	HDPE NM, 500 mL	> 2 FAIL	①
25D0382-06 A	Glass NM, Amber, 1000 mL		
25D0382-06 B	Glass NM, Amber, 1000 mL		
25D0382-06 C	HDPE NM, 500 mL	> 2 FAIL	①
25D0382-07 A	Glass NM, Amber, 1000 mL		
25D0382-07 B	Glass NM, Amber, 1000 mL		
25D0382-07 C	HDPE NM, 500 mL	> 2 FAIL	①
25D0382-08 A	Glass NM, Amber, 1000 mL		
25D0382-08 B	Glass NM, Amber, 1000 mL		
25D0382-08 C	HDPE NM, 500 mL	> 2 FAIL	①
25D0382-09 A	Glass NM, Amber, 1000 mL		
25D0382-09 B	Glass NM, Amber, 1000 mL		
25D0382-09 C	HDPE NM, 500 mL	> 2 FAIL	①
25D0382-10 A	Glass NM, Amber, 1000 mL		
25D0382-10 B	Glass NM, Amber, 1000 mL		
25D0382-10 C	HDPE NM, 500 mL	> 2 FAIL	①
25D0382-11 A	Glass NM, Amber, 1000 mL		
25D0382-11 B	Glass NM, Amber, 1000 mL		
25D0382-11 C	HDPE NM, 500 mL	> 2 FAIL	①
25D0382-12 A	Glass NM, Amber, 1000 mL		
25D0382-12 B	Glass NM, Amber, 1000 mL		
25D0382-12 C	HDPE NM, 500 mL	> 2 FAIL	①
25D0382-13 A	Glass NM, Amber, 1000 mL		
25D0382-13 B	Glass NM, Amber, 1000 mL		



WORK ORDER

25D0382

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

Client: Floyd - Snider		Project Manager: Kelly Bottem	
Project: Lora Lake 2025		Project Number: [none]	
25D0382-13 C	HDPE NM, 500 mL	>2 FAIL	①
25D0382-14 A	Glass NM, Amber, 1000 mL		
25D0382-14 B	Glass NM, Amber, 1000 mL		
25D0382-14 C	HDPE NM, 500 mL	>2 FAIL	①

SA for RM
Preservation Confirmed By _____

4/17/25
Date _____

① Filtered at 0.45 um and preserved to pH < 2.0 with 0.50ml conc HNO₃ (M13692). W 04/17/25 1530



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-VB2-041525
25D0382-01 (Water)

Dioxins/Furans

Method: EPA 1613B	Preparation Method: EPA 1613	Sample Size: 1060 mL	Extract ID: 25D0382-01 A 01
Instrument: AUTOSPEC01 Analyst: jgr	Preparation Batch: BND0570	Final Volume: 20 uL	
	Prepared: 04/28/2025		
Sample Cleanup:	Cleanup Method: Silica Gel	Initial Volume: 20 uL	Extract ID: 25D0382-01 A 01
	Cleanup Batch: CND0126	Final Volume: 20 uL	
	Cleaned: 29-Apr-2025		
Sample Cleanup:	Cleanup Method: Florisil	Initial Volume: 20 uL	Extract ID: 25D0382-01 A 01
	Cleanup Batch: CND0127	Final Volume: 20 uL	
	Cleaned: 29-Apr-2025		

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting		Result	Units	Notes
				EDL	Limit			
2,3,7,8-TCDF			0.655-0.886	2.67	9.43	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	1.71	9.43	ND	pg/L	U
1,2,3,7,8-PeCDF		1.517	1.318-1.783		9.43	3.21	pg/L	J
2,3,4,7,8-PeCDF		0.978	1.318-1.783		9.43	2.11	pg/L	EMPC, J
1,2,3,7,8-PeCDD			1.318-1.783	3.18	9.43	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	2.10	9.43	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	2.08	9.43	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	2.30	9.43	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	3.33	9.43	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	4.59	9.43	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	4.91	9.43	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	5.16	9.43	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	2.73	18.9	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	4.05	9.43	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD			0.893-1.208	3.89	9.43	ND	pg/L	U
OCDF			0.757-1.024	5.27	18.9	ND	pg/L	U
OCDD		1.899	0.757-1.024		47.2	6.05	pg/L	EMPC, J, B

Homologue groups

Total TCDF					9.43	ND	pg/L	U
Total TCDD					9.43	ND	pg/L	U
Total PeCDF					9.43	3.21	pg/L	J
Total PeCDD					9.43	ND	pg/L	U
Total HxCDF					9.43	ND	pg/L	U
Total HxCDD					9.43	ND	pg/L	U
Total HpCDF					9.43	ND	pg/L	U
Total HpCDD					9.43	ND	pg/L	U



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-VB2-041525
25D0382-01 (Water)

Dioxins/Furans

Method: EPA 1613B Sampled: 04/15/2025 09:15
Instrument: AUTOSPEC01 Analyst: jgr Analyzed: 05/05/2025 13:35

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):				4.59			
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):				0.73			
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):				4.27			
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):				0.00			



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]
Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

MW-VB2-041525

25D0382-01 (Water)

Dioxins/Furans

Method: EPA 1613B

Sampled: 04/15/2025 09:15

Instrument: AUTOSPEC01 Analyst: jgr

Analyzed: 05/05/2025 13:35

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.753	0.655-0.886	24-169 %	73.4	%	
<i>13C12-2,3,7,8-TCDD</i>		0.782	0.655-0.886	25-164 %	97.6	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.589	1.318-1.783	24-185 %	75.9	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.571	1.318-1.783	21-178 %	74.1	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.642	1.318-1.783	25-181 %	70.2	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.551	0.434-0.587	26-152 %	97.0	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.500	0.434-0.587	26-123 %	99.5	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.534	0.434-0.587	28-136 %	87.4	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.506	0.434-0.587	29-147 %	87.0	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.221	1.054-1.426	32-141 %	97.4	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.229	1.054-1.426	28-130 %	102	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.494	0.374-0.506	28-143 %	80.3	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.443	0.374-0.506	26-138 %	73.2	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.107	0.893-1.208	23-140 %	87.5	%	
<i>13C12-OCDD</i>		0.867	0.757-1.024	17-157 %	95.3	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	92.7	%	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-VB2-041525
25D0382-01 (Water)

Dioxins/Furans

Method: EPA 1613B
Instrument: AUTOSPEC01 Analyst: jgr

Sampled: 04/15/2025 09:15
Analyzed: 05/05/2025 13:35

MW-VB2-041525
25D0382-01 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020B
Instrument: ICPMS1 Analyst: MCB

Sampled: 04/15/2025 09:15
Analyzed: 05/03/2025 00:56

Sample Preparation: Preparation Method: REN - EPA 3010A M
Preparation Batch: BNE0049 Sample Size: 25 mL
Prepared: 05/02/2025 Final Volume: 25 mL

Extract ID: 25D0382-01 C 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic UCT, Dissolved	7440-38-2	1	0.100	0.200	0.371	ug/L	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-C1/VB1-041525
25D0382-02 (Water)

Dioxins/Furans

Method: EPA 1613B	Preparation Method: EPA 1613	Sampled: 04/15/2025 10:10
Instrument: AUTOSPEC01 Analyst: jgr	Preparation Batch: BND0570	Analyzed: 05/05/2025 14:24
Sample Preparation:	Prepared: 04/28/2025	Sample Size: 1060 mL
		Final Volume: 20 uL
Sample Cleanup:	Cleanup Method: Silica Gel	Extract ID: 25D0382-02 A 01
	Cleanup Batch: CND0126	Initial Volume: 20 uL
	Cleaned: 29-Apr-2025	Final Volume: 20 uL
Sample Cleanup:	Cleanup Method: Florisil	Extract ID: 25D0382-02 A 01
	Cleanup Batch: CND0127	Initial Volume: 20 uL
	Cleaned: 29-Apr-2025	Final Volume: 20 uL

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting		Result	Units	Notes
				EDL	Limit			
2,3,7,8-TCDF			0.655-0.886	2.72	9.43	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	1.93	9.43	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	1.83	9.43	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	2.04	9.43	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	3.49	9.43	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	2.61	9.43	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	2.50	9.43	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	2.72	9.43	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	4.03	9.43	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	4.64	9.43	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	4.74	9.43	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	5.09	9.43	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	3.03	18.9	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	5.04	9.43	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD			0.893-1.208	4.83	9.43	ND	pg/L	U
OCDF			0.757-1.024	5.50	18.9	ND	pg/L	U
OCDD			0.757-1.024	5.79	47.2	ND	pg/L	U

Homologue groups

Total TCDF					9.43	ND	pg/L	U
Total TCDD					9.43	ND	pg/L	U
Total PeCDF					9.43	ND	pg/L	U
Total PeCDD					9.43	ND	pg/L	U
Total HxCDF					9.43	ND	pg/L	U
Total HxCDD					9.43	ND	pg/L	U
Total HpCDF					9.43	ND	pg/L	U
Total HpCDD					9.43	ND	pg/L	U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 4.56
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.00
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND): 4.56
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND): 0.00



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

MW-C1/VB1-041525

25D0382-02 (Water)

Dioxins/Furans

Method: EPA 1613B

Sampled: 04/15/2025 10:10

Instrument: AUTOSPEC01 Analyst: jgr

Analyzed: 05/05/2025 14:24

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.780	0.655-0.886	24-169 %	70.6	%	
<i>13C12-2,3,7,8-TCDD</i>		0.782	0.655-0.886	25-164 %	91.7	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.465	1.318-1.783	24-185 %	76.2	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.590	1.318-1.783	21-178 %	69.5	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.639	1.318-1.783	25-181 %	67.8	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.527	0.434-0.587	26-152 %	95.4	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.477	0.434-0.587	26-123 %	97.9	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.559	0.434-0.587	28-136 %	88.6	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.521	0.434-0.587	29-147 %	79.8	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.242	1.054-1.426	32-141 %	97.0	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.259	1.054-1.426	28-130 %	98.7	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.438	0.374-0.506	28-143 %	79.9	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.470	0.374-0.506	26-138 %	72.2	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.093	0.893-1.208	23-140 %	87.7	%	
<i>13C12-OCDD</i>		0.905	0.757-1.024	17-157 %	84.6	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	90.0	%	



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MW-C1/VB1-041525
25D0382-02 (Water)

Dioxins/Furans

Method: EPA 1613B Sampled: 04/15/2025 10:10
Instrument: AUTOSPEC01 Analyst: jgr Analyzed: 05/05/2025 14:24

MW-C1/VB1-041525
25D0382-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020B Sampled: 04/15/2025 10:10
Instrument: ICPMS1 Analyst: MCB Analyzed: 05/03/2025 00:16

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 25D0382-02 C 02
Preparation Batch: BNE0049 Sample Size: 25 mL
Prepared: 05/02/2025 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic UCT, Dissolved	7440-38-2	1	0.100	0.200	0.104	ug/L	J



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MW-C2-041525
25D0382-03 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 04/15/2025 11:05
Instrument: ICPMS1 Analyst: MCB	Preparation Batch: BNE0049	Analyzed: 05/03/2025 00:20
Sample Preparation:	Prepared: 05/02/2025	Extract ID: 25D0382-03 A 02
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic UCT, Dissolved	7440-38-2	1	0.100	0.200	41.9	ug/L	



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MW-C3-041525
25D0382-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 04/15/2025 11:10
Instrument: ICPMS1 Analyst: MCB	Preparation Batch: BNE0049	Analyzed: 05/03/2025 00:37
Sample Preparation:	Prepared: 05/02/2025	Extract ID: 25D0382-04 A 02
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic UCT, Dissolved	7440-38-2	1	0.100	0.200	0.143	ug/L	J



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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HC00-B312-041525
25D0382-05 (Water)

Dioxins/Furans

Method: EPA 1613B	Preparation Method: EPA 1613	Sampled: 04/15/2025 16:05
Instrument: AUTOSPEC01 Analyst: jgr	Preparation Batch: BND0570	Analyzed: 05/05/2025 15:14
Sample Preparation:	Prepared: 04/28/2025	Extract ID: 25D0382-05 A 01
	Sample Size: 1060 mL	
	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Silica Gel	Extract ID: 25D0382-05 A 01
	Cleanup Batch: CND0126	Initial Volume: 20 uL
	Cleaned: 29-Apr-2025	Final Volume: 20 uL
Sample Cleanup:	Cleanup Method: Florisil	Extract ID: 25D0382-05 A 01
	Cleanup Batch: CND0127	Initial Volume: 20 uL
	Cleaned: 29-Apr-2025	Final Volume: 20 uL

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting		Result	Units	Notes
				EDL	Limit			
2,3,7,8-TCDF			0.655-0.886	2.94	9.43	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	2.02	9.43	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	2.01	9.43	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	2.18	9.43	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	4.28	9.43	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	2.60	9.43	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	2.73	9.43	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	2.71	9.43	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	4.56	9.43	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	3.83	9.43	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	4.14	9.43	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	4.33	9.43	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	3.01	18.9	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	5.14	9.43	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD			0.893-1.208	5.56	9.43	ND	pg/L	U
OCDF			0.757-1.024	5.91	18.9	ND	pg/L	U
OCDD		0.935	0.757-1.024		47.2	7.91	pg/L	J, B

Homologue groups

Total TCDF					9.43	ND	pg/L	U
Total TCDD					9.43	ND	pg/L	U
Total PeCDF					9.43	ND	pg/L	U
Total PeCDD					9.43	ND	pg/L	U
Total HxCDF					9.43	ND	pg/L	U
Total HxCDD					9.43	ND	pg/L	U
Total HpCDF					9.43	ND	pg/L	U
Total HpCDD					9.43	ND	pg/L	U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 4.97
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.00
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND): 4.97
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND): 0.00



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]
Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

HC00-B312-041525

25D0382-05 (Water)

Dioxins/Furans

Method: EPA 1613B

Sampled: 04/15/2025 16:05

Instrument: AUTOSPEC01 Analyst: jgr

Analyzed: 05/05/2025 15:14

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
13C12-2,3,7,8-TCDF		0.792	0.655-0.886	24-169 %	65.9	%	
13C12-2,3,7,8-TCDD		0.790	0.655-0.886	25-164 %	85.5	%	
13C12-1,2,3,7,8-PeCDF		1.424	1.318-1.783	24-185 %	70.7	%	
13C12-2,3,4,7,8-PeCDF		1.602	1.318-1.783	21-178 %	66.1	%	
13C12-1,2,3,7,8-PeCDD		1.657	1.318-1.783	25-181 %	63.6	%	
13C12-1,2,3,4,7,8-HxCDF		0.531	0.434-0.587	26-152 %	88.6	%	
13C12-1,2,3,6,7,8-HxCDF		0.553	0.434-0.587	26-123 %	86.4	%	
13C12-2,3,4,6,7,8-HxCDF		0.549	0.434-0.587	28-136 %	80.5	%	
13C12-1,2,3,7,8,9-HxCDF		0.546	0.434-0.587	29-147 %	72.6	%	
13C12-1,2,3,4,7,8-HxCDD		1.235	1.054-1.426	32-141 %	87.0	%	
13C12-1,2,3,6,7,8-HxCDD		1.303	1.054-1.426	28-130 %	89.0	%	
13C12-1,2,3,4,6,7,8-HpCDF		0.464	0.374-0.506	28-143 %	72.2	%	
13C12-1,2,3,4,7,8,9-HpCDF		0.475	0.374-0.506	26-138 %	67.5	%	
13C12-1,2,3,4,6,7,8-HpCDD		1.129	0.893-1.208	23-140 %	77.7	%	
13C12-OCDD		0.858	0.757-1.024	17-157 %	75.2	%	
37Cl4-2,3,7,8-TCDD				35-197 %	88.5	%	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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HC00-B312-041525
25D0382-05 (Water)

Dioxins/Furans

Method: EPA 1613B Sampled: 04/15/2025 16:05
Instrument: AUTOSPEC01 Analyst: jgr Analyzed: 05/05/2025 15:14

HC00-B312-041525
25D0382-05 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020B Sampled: 04/15/2025 16:05
Instrument: ICPMS1 Analyst: MCB Analyzed: 05/03/2025 00:41

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 25D0382-05 C 02
Preparation Batch: BNE0049 Sample Size: 25 mL
Prepared: 05/02/2025 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic UCT, Dissolved	7440-38-2	1	0.100	0.200	0.161	ug/L	J



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-VB3-041525
25D0382-06 (Water)

Dioxins/Furans

Method: EPA 1613B		Sampled: 04/15/2025 16:25
Instrument: AUTOSPEC01 Analyst: jgr		Analyzed: 05/05/2025 16:03
Sample Preparation:	Preparation Method: EPA 1613 Preparation Batch: BND0570 Prepared: 04/28/2025	Sample Size: 990 mL Final Volume: 20 uL Extract ID: 25D0382-06 A 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CND0126 Cleaned: 29-Apr-2025	Initial Volume: 20 uL Final Volume: 20 uL Extract ID: 25D0382-06 A 01
Sample Cleanup:	Cleanup Method: Florisil Cleanup Batch: CND0127 Cleaned: 29-Apr-2025	Initial Volume: 20 uL Final Volume: 20 uL Extract ID: 25D0382-06 A 01

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting		Result	Units	Notes
				EDL	Limit			
2,3,7,8-TCDF			0.655-0.886	2.89	10.1	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	1.96	10.1	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	2.08	10.1	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	2.10	10.1	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	4.09	10.1	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	2.56	10.1	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	2.72	10.1	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	2.69	10.1	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	3.99	10.1	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	4.61	10.1	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	4.85	10.1	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	5.14	10.1	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	2.84	20.2	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	4.15	10.1	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD			0.893-1.208	5.22	10.1	ND	pg/L	U
OCDF			0.757-1.024	4.78	20.2	ND	pg/L	U
OCDD			0.757-1.024	7.38	50.5	ND	pg/L	U

Homologue groups

Total TCDF					10.1	ND	pg/L	U
Total TCDD					10.1	ND	pg/L	U
Total PeCDF					10.1	ND	pg/L	U
Total PeCDD					10.1	ND	pg/L	U
Total HxCDF					10.1	ND	pg/L	U
Total HxCDD					10.1	ND	pg/L	U
Total HpCDF					10.1	ND	pg/L	U
Total HpCDD					10.1	ND	pg/L	U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 4.91
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.00
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND): 4.91
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND): 0.00



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

MW-VB3-041525

25D0382-06 (Water)

Dioxins/Furans

Method: EPA 1613B

Sampled: 04/15/2025 16:25

Instrument: AUTOSPEC01 Analyst: jgr

Analyzed: 05/05/2025 16:03

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.769	0.655-0.886	24-169 %	74.9	%	
<i>13C12-2,3,7,8-TCDD</i>		0.787	0.655-0.886	25-164 %	94.7	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.616	1.318-1.783	24-185 %	76.7	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.508	1.318-1.783	21-178 %	76.1	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.656	1.318-1.783	25-181 %	73.4	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.529	0.434-0.587	26-152 %	91.3	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.549	0.434-0.587	26-123 %	89.9	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.539	0.434-0.587	28-136 %	80.5	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.502	0.434-0.587	29-147 %	79.8	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.263	1.054-1.426	32-141 %	88.9	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.288	1.054-1.426	28-130 %	90.2	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.465	0.374-0.506	28-143 %	73.3	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.416	0.374-0.506	26-138 %	68.1	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.127	0.893-1.208	23-140 %	84.5	%	
<i>13C12-OCDD</i>		0.910	0.757-1.024	17-157 %	86.6	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	91.5	%	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-VB3-041525
25D0382-06 (Water)

Dioxins/Furans

Method: EPA 1613B Sampled: 04/15/2025 16:25
Instrument: AUTOSPEC01 Analyst: jgr Analyzed: 05/05/2025 16:03

MW-VB3-041525
25D0382-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020B Sampled: 04/15/2025 16:25
Instrument: ICPMS1 Analyst: MCB Analyzed: 05/03/2025 00:45

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 25D0382-06 C 02
Preparation Batch: BNE0049 Sample Size: 25 mL
Prepared: 05/02/2025 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic UCT, Dissolved	7440-38-2	1	0.100	0.200	0.397	ug/L	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-CP4-041625
25D0382-07 (Water)

Dioxins/Furans

Method: EPA 1613B	Preparation Method: EPA 1613	Sampled: 04/16/2025 11:45
Instrument: AUTOSPEC01 Analyst: jgr	Preparation Batch: BND0570	Analyzed: 05/05/2025 18:38
Sample Preparation:	Prepared: 04/28/2025	Extract ID: 25D0382-07 A 01
	Sample Size: 1050 mL	
	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Silica Gel	Extract ID: 25D0382-07 A 01
	Cleanup Batch: CND0126	Initial Volume: 20 uL
	Cleaned: 29-Apr-2025	Final Volume: 20 uL
Sample Cleanup:	Cleanup Method: Florisil	Extract ID: 25D0382-07 A 01
	Cleanup Batch: CND0127	Initial Volume: 20 uL
	Cleaned: 29-Apr-2025	Final Volume: 20 uL

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting		Result	Units	Notes
				EDL	Limit			
2,3,7,8-TCDF			0.655-0.886	2.91	9.52	ND	pg/L	U
2,3,7,8-TCDD		0.882	0.655-0.886		9.52	3.40	pg/L	J
1,2,3,7,8-PeCDF			1.318-1.783	2.88	9.52	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	2.83	9.52	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	4.42	9.52	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	2.49	9.52	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	2.50	9.52	ND	pg/L	U
2,3,4,6,7,8-HxCDF		1.087	1.054-1.426		9.52	2.31	pg/L	J
1,2,3,7,8,9-HxCDF			1.054-1.426	4.41	9.52	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	4.40	9.52	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	4.42	9.52	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	4.77	9.52	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	3.05	19.0	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	4.80	9.52	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD			0.893-1.208	5.62	9.52	ND	pg/L	U
OCDF			0.757-1.024	6.10	19.0	ND	pg/L	U
OCDD			0.757-1.024	7.73	47.6	ND	pg/L	U

Homologue groups

Total TCDF					9.52	ND	pg/L	U
Total TCDD					9.52	3.40	pg/L	J
Total PeCDF					9.52	ND	pg/L	U
Total PeCDD					9.52	ND	pg/L	U
Total HxCDF					9.52	2.31	pg/L	J
Total HxCDD					9.52	ND	pg/L	U
Total HpCDF					9.52	ND	pg/L	U
Total HpCDD					9.52	ND	pg/L	U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 7.58
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 3.40
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND): 7.58
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND): 0.00



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]
Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

MW-CP4-041625

25D0382-07 (Water)

Dioxins/Furans

Method: EPA 1613B

Sampled: 04/16/2025 11:45

Instrument: AUTOSPEC01 Analyst: jgr

Analyzed: 05/05/2025 18:38

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.777	0.655-0.886	24-169 %	73.8	%	
<i>13C12-2,3,7,8-TCDD</i>		0.740	0.655-0.886	25-164 %	96.4	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.690	1.318-1.783	24-185 %	73.6	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.610	1.318-1.783	21-178 %	70.5	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.526	1.318-1.783	25-181 %	66.3	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.550	0.434-0.587	26-152 %	99.6	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.523	0.434-0.587	26-123 %	102	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.528	0.434-0.587	28-136 %	92.0	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.551	0.434-0.587	29-147 %	83.1	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.243	1.054-1.426	32-141 %	94.0	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.283	1.054-1.426	28-130 %	102	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.406	0.374-0.506	28-143 %	87.1	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.378	0.374-0.506	26-138 %	71.1	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.052	0.893-1.208	23-140 %	79.0	%	
<i>13C12-OCDD</i>		0.925	0.757-1.024	17-157 %	85.4	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	96.6	%	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-CP4-041625
25D0382-07 (Water)

Dioxins/Furans

Method: EPA 1613B Sampled: 04/16/2025 11:45
Instrument: AUTOSPEC01 Analyst: jgr Analyzed: 05/05/2025 18:38

MW-CP4-041625
25D0382-07 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020B Sampled: 04/16/2025 11:45
Instrument: ICPMS1 Analyst: MCB Analyzed: 05/03/2025 00:48

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 25D0382-07 C 02
Preparation Batch: BNE0049 Sample Size: 25 mL
Prepared: 05/02/2025 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic UCT, Dissolved	7440-38-2	1	0.100	0.200	0.122	ug/L	J



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-CP2-041625
25D0382-08 (Water)

Dioxins/Furans

Method: EPA 1613B	Preparation Method: EPA 1613	Sampled: 04/16/2025 12:00
Instrument: AUTOSPEC01 Analyst: jgr	Preparation Batch: BND0570	Analyzed: 05/05/2025 19:27
Sample Preparation:	Prepared: 04/28/2025	Sample Size: 1000 mL
		Final Volume: 20 uL
Sample Cleanup:	Cleanup Method: Silica Gel	Extract ID: 25D0382-08 A 01
	Cleanup Batch: CND0126	Initial Volume: 20 uL
	Cleaned: 29-Apr-2025	Final Volume: 20 uL
Sample Cleanup:	Cleanup Method: Florisil	Extract ID: 25D0382-08 A 01
	Cleanup Batch: CND0127	Initial Volume: 20 uL
	Cleaned: 29-Apr-2025	Final Volume: 20 uL

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting		Result	Units	Notes
				EDL	Limit			
2,3,7,8-TCDF			0.655-0.886	2.65	10.0	ND	pg/L	U
2,3,7,8-TCDD		0.703	0.655-0.886		10.0	1.90	pg/L	J
1,2,3,7,8-PeCDF			1.318-1.783	2.54	10.0	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	2.76	10.0	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	3.42	10.0	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	2.05	10.0	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	2.12	10.0	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	2.12	10.0	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	3.37	10.0	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	4.02	10.0	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	4.08	10.0	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	4.39	10.0	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	3.07	20.0	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	5.27	10.0	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD		0.939	0.893-1.208		10.0	7.88	pg/L	J
OCDF		0.764	0.757-1.024		20.0	11.6	pg/L	J
OCDD		0.922	0.757-1.024		50.0	80.0	pg/L	B

Homologue groups

Total TCDF					10.0	ND	pg/L	U
Total TCDD					10.0	1.90	pg/L	J
Total PeCDF					10.0	ND	pg/L	U
Total PeCDD					10.0	ND	pg/L	U
Total HxCDF					10.0	ND	pg/L	U
Total HxCDD					10.0	ND	pg/L	U
Total HpCDF					10.0	ND	pg/L	U
Total HpCDD					10.0	16.9	pg/L	

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 5.45
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 2.01
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND): 5.45
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND): 2.01



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]
Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

MW-CP2-041625

25D0382-08 (Water)

Dioxins/Furans

Method: EPA 1613B

Sampled: 04/16/2025 12:00

Instrument: AUTOSPEC01 Analyst: jgr

Analyzed: 05/05/2025 19:27

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.834	0.655-0.886	24-169 %	69.4	%	
<i>13C12-2,3,7,8-TCDD</i>		0.805	0.655-0.886	25-164 %	84.8	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.585	1.318-1.783	24-185 %	70.0	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.730	1.318-1.783	21-178 %	70.0	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.709	1.318-1.783	25-181 %	66.3	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.529	0.434-0.587	26-152 %	84.7	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.548	0.434-0.587	26-123 %	88.2	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.541	0.434-0.587	28-136 %	80.5	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.547	0.434-0.587	29-147 %	75.3	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.237	1.054-1.426	32-141 %	86.5	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.251	1.054-1.426	28-130 %	91.1	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.439	0.374-0.506	28-143 %	74.3	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.444	0.374-0.506	26-138 %	71.5	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.040	0.893-1.208	23-140 %	79.5	%	
<i>13C12-OCDD</i>		0.873	0.757-1.024	17-157 %	80.6	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	89.2	%	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-CP2-041625
25D0382-08 (Water)

Dioxins/Furans

Method: EPA 1613B Sampled: 04/16/2025 12:00
Instrument: AUTOSPEC01 Analyst: jgr Analyzed: 05/05/2025 19:27

MW-CP2-041625
25D0382-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020B Sampled: 04/16/2025 12:00
Instrument: ICPMS1 Analyst: MCB Analyzed: 05/03/2025 00:52

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 25D0382-08 C 02
Preparation Batch: BNE0049 Sample Size: 25 mL
Prepared: 05/02/2025 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic UCT, Dissolved	7440-38-2	1	0.100	0.200	0.402	ug/L	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-CP6-041625
25D0382-09 (Water)

Dioxins/Furans

Method: EPA 1613B	Preparation Method: EPA 1613	Sample Size: 1030 mL	Sampled: 04/16/2025 12:40
Instrument: AUTOSPEC01 Analyst: jgr	Preparation Batch: BND0570	Final Volume: 20 uL	Analyzed: 05/05/2025 20:17
Sample Preparation:	Prepared: 04/28/2025	Extract ID: 25D0382-09 A 01	
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CND0126 Cleaned: 29-Apr-2025	Initial Volume: 20 uL Final Volume: 20 uL	Extract ID: 25D0382-09 A 01
Sample Cleanup:	Cleanup Method: Florisil Cleanup Batch: CND0127 Cleaned: 29-Apr-2025	Initial Volume: 20 uL Final Volume: 20 uL	Extract ID: 25D0382-09 A 01

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting		Result	Units	Notes
				EDL	Limit			
2,3,7,8-TCDF			0.655-0.886	2.53	9.71	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	2.34	9.71	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	2.28	9.71	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	2.33	9.71	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	3.08	9.71	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	2.24	9.71	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	2.13	9.71	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	2.25	9.71	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	3.42	9.71	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	4.50	9.71	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	4.51	9.71	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	4.88	9.71	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	2.44	19.4	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	4.02	9.71	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD			0.893-1.208	4.34	9.71	ND	pg/L	U
OCDF			0.757-1.024	4.88	19.4	ND	pg/L	U
OCDD			0.757-1.024	5.98	48.5	ND	pg/L	U

Homologue groups

Total TCDF					9.71	ND	pg/L	U
Total TCDD					9.71	ND	pg/L	U
Total PeCDF					9.71	ND	pg/L	U
Total PeCDD					9.71	ND	pg/L	U
Total HxCDF					9.71	ND	pg/L	U
Total HxCDD					9.71	ND	pg/L	U
Total HpCDF					9.71	ND	pg/L	U
Total HpCDD					9.71	ND	pg/L	U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 4.47
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.00
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND): 4.47
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND): 0.00



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

MW-CP6-041625

25D0382-09 (Water)

Dioxins/Furans

Method: EPA 1613B

Sampled: 04/16/2025 12:40

Instrument: AUTOSPEC01 Analyst: jgr

Analyzed: 05/05/2025 20:17

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.763	0.655-0.886	24-169 %	70.4	%	
<i>13C12-2,3,7,8-TCDD</i>		0.783	0.655-0.886	25-164 %	89.4	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.602	1.318-1.783	24-185 %	74.5	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.654	1.318-1.783	21-178 %	71.1	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.549	1.318-1.783	25-181 %	69.3	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.544	0.434-0.587	26-152 %	89.7	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.540	0.434-0.587	26-123 %	89.9	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.531	0.434-0.587	28-136 %	84.3	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.510	0.434-0.587	29-147 %	79.5	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.245	1.054-1.426	32-141 %	88.7	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.266	1.054-1.426	28-130 %	96.1	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.461	0.374-0.506	28-143 %	84.6	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.449	0.374-0.506	26-138 %	71.8	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.049	0.893-1.208	23-140 %	86.8	%	
<i>13C12-OCDD</i>		0.927	0.757-1.024	17-157 %	92.1	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	86.6	%	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-CP6-041625
25D0382-09 (Water)

Dioxins/Furans

Method: EPA 1613B Sampled: 04/16/2025 12:40
Instrument: AUTOSPEC01 Analyst: jgr Analyzed: 05/05/2025 20:17

MW-CP6-041625
25D0382-09 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020B Sampled: 04/16/2025 12:40
Instrument: ICPMS1 Analyst: MCB Analyzed: 05/03/2025 01:24

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 25D0382-09 C 02
Preparation Batch: BNE0049 Sample Size: 25 mL
Prepared: 05/02/2025 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic UCT, Dissolved	7440-38-2	1	0.100	0.200	1.14	ug/L	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-CP1-041625
25D0382-10 (Water)

Dioxins/Furans

Method: EPA 1613B	Preparation Method: EPA 1613	Sampled: 04/16/2025 13:15
Instrument: AUTOSPEC01 Analyst: jgr	Preparation Batch: BND0570	Analyzed: 05/05/2025 21:06
Sample Preparation:	Prepared: 04/28/2025	Sample Size: 1060 mL
		Final Volume: 20 uL
Sample Cleanup:	Cleanup Method: Silica Gel	Extract ID: 25D0382-10 A 01
	Cleanup Batch: CND0126	Initial Volume: 20 uL
	Cleaned: 29-Apr-2025	Final Volume: 20 uL
Sample Cleanup:	Cleanup Method: Florisil	Extract ID: 25D0382-10 A 01
	Cleanup Batch: CND0127	Initial Volume: 20 uL
	Cleaned: 29-Apr-2025	Final Volume: 20 uL

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting		Result	Units	Notes
				EDL	Limit			
2,3,7,8-TCDF			0.655-0.886	2.37	9.43	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	2.42	9.43	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	2.76	9.43	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	2.93	9.43	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	3.50	9.43	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	2.52	9.43	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	2.38	9.43	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	2.66	9.43	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	4.12	9.43	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	4.33	9.43	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	4.28	9.43	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	4.66	9.43	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	2.22	18.9	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	4.16	9.43	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD			0.893-1.208	5.28	9.43	ND	pg/L	U
OCDF			0.757-1.024	7.21	18.9	ND	pg/L	U
OCDD			0.757-1.024	6.94	47.2	ND	pg/L	U

Homologue groups

Total TCDF					9.43	ND	pg/L	U
Total TCDD					9.43	ND	pg/L	U
Total PeCDF					9.43	ND	pg/L	U
Total PeCDD					9.43	ND	pg/L	U
Total HxCDF					9.43	ND	pg/L	U
Total HxCDD					9.43	ND	pg/L	U
Total HpCDF					9.43	ND	pg/L	U
Total HpCDD					9.43	ND	pg/L	U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 4.87
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.00
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND): 4.87
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND): 0.00



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

MW-CP1-041625

25D0382-10 (Water)

Dioxins/Furans

Method: EPA 1613B

Sampled: 04/16/2025 13:15

Instrument: AUTOSPEC01 Analyst: jgr

Analyzed: 05/05/2025 21:06

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.759	0.655-0.886	24-169 %	67.4	%	
<i>13C12-2,3,7,8-TCDD</i>		0.825	0.655-0.886	25-164 %	87.5	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.682	1.318-1.783	24-185 %	67.0	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.618	1.318-1.783	21-178 %	65.9	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.638	1.318-1.783	25-181 %	63.5	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.518	0.434-0.587	26-152 %	93.8	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.508	0.434-0.587	26-123 %	99.8	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.538	0.434-0.587	28-136 %	83.9	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.572	0.434-0.587	29-147 %	83.2	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.322	1.054-1.426	32-141 %	90.9	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.297	1.054-1.426	28-130 %	93.7	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.432	0.374-0.506	28-143 %	84.1	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.447	0.374-0.506	26-138 %	71.6	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.074	0.893-1.208	23-140 %	81.1	%	
<i>13C12-OCDD</i>		1.014	0.757-1.024	17-157 %	81.6	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	86.1	%	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-CP1-041625
25D0382-10 (Water)

Dioxins/Furans

Method: EPA 1613B Sampled: 04/16/2025 13:15
Instrument: AUTOSPEC01 Analyst: jgr Analyzed: 05/05/2025 21:06

MW-CP1-041625
25D0382-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020B Sampled: 04/16/2025 13:15
Instrument: ICPMS1 Analyst: MCB Analyzed: 05/03/2025 01:28

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 25D0382-10 C 02
Preparation Batch: BNE0049 Sample Size: 25 mL
Prepared: 05/02/2025 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic UCT, Dissolved	7440-38-2	1	0.100	0.200	0.282	ug/L	



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

MW-CP1-041625-D
25D0382-11 (Water)

Dioxins/Furans

Method: EPA 1613B

Sampled: 04/16/2025 13:30

Instrument: AUTOSPEC01 Analyst: jgr

Analyzed: 05/05/2025 21:56

Sample Preparation: Preparation Method: EPA 1613 Sample Size: 960 mL
Preparation Batch: BND0570 Final Volume: 20 uL
Prepared: 04/28/2025 Extract ID: 25D0382-11 A 01

Sample Cleanup: Cleanup Method: Silica Gel Initial Volume: 20 uL
Cleanup Batch: CND0126 Final Volume: 20 uL
Cleaned: 29-Apr-2025 Extract ID: 25D0382-11 A 01

Sample Cleanup: Cleanup Method: Florisil Initial Volume: 20 uL
Cleanup Batch: CND0127 Final Volume: 20 uL
Cleaned: 29-Apr-2025 Extract ID: 25D0382-11 A 01

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting		Result	Units	Notes
				EDL	Limit			
2,3,7,8-TCDF			0.655-0.886	2.86	10.4	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	2.01	10.4	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	2.74	10.4	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	2.91	10.4	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	3.96	10.4	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	2.66	10.4	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	2.49	10.4	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	2.79	10.4	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	4.03	10.4	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	4.62	10.4	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	4.72	10.4	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	5.07	10.4	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	2.89	20.8	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	5.43	10.4	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD			0.893-1.208	6.28	10.4	ND	pg/L	U
OCDF			0.757-1.024	6.12	20.8	ND	pg/L	U
OCDD			0.757-1.024	8.51	52.1	ND	pg/L	U

Homologue groups

Total TCDF					10.4	ND	pg/L	U
Total TCDD					10.4	ND	pg/L	U
Total PeCDF					10.4	ND	pg/L	U
Total PeCDD					10.4	ND	pg/L	U
Total HxCDF					10.4	ND	pg/L	U
Total HxCDD					10.4	ND	pg/L	U
Total HpCDF					10.4	ND	pg/L	U
Total HpCDD					10.4	ND	pg/L	U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 5.00

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.00

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND): 5.00

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND): 0.00



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

MW-CP1-041625-D

25D0382-11 (Water)

Dioxins/Furans

Method: EPA 1613B

Sampled: 04/16/2025 13:30

Instrument: AUTOSPEC01 Analyst: jgr

Analyzed: 05/05/2025 21:56

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
13C12-2,3,7,8-TCDF		0.763	0.655-0.886	24-169 %	71.6	%	
13C12-2,3,7,8-TCDD		0.794	0.655-0.886	25-164 %	95.3	%	
13C12-1,2,3,7,8-PeCDF		1.596	1.318-1.783	24-185 %	72.2	%	
13C12-2,3,4,7,8-PeCDF		1.631	1.318-1.783	21-178 %	67.0	%	
13C12-1,2,3,7,8-PeCDD		1.651	1.318-1.783	25-181 %	67.0	%	
13C12-1,2,3,4,7,8-HxCDF		0.545	0.434-0.587	26-152 %	93.7	%	
13C12-1,2,3,6,7,8-HxCDF		0.522	0.434-0.587	26-123 %	93.3	%	
13C12-2,3,4,6,7,8-HxCDF		0.554	0.434-0.587	28-136 %	86.7	%	
13C12-1,2,3,7,8,9-HxCDF		0.462	0.434-0.587	29-147 %	79.2	%	
13C12-1,2,3,4,7,8-HxCDD		1.221	1.054-1.426	32-141 %	92.4	%	
13C12-1,2,3,6,7,8-HxCDD		1.214	1.054-1.426	28-130 %	96.3	%	
13C12-1,2,3,4,6,7,8-HpCDF		0.425	0.374-0.506	28-143 %	82.6	%	
13C12-1,2,3,4,7,8,9-HpCDF		0.435	0.374-0.506	26-138 %	65.4	%	
13C12-1,2,3,4,6,7,8-HpCDD		1.054	0.893-1.208	23-140 %	82.4	%	
13C12-OCDD		0.813	0.757-1.024	17-157 %	76.4	%	
37Cl4-2,3,7,8-TCDD				35-197 %	92.6	%	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-CP1-041625-D
25D0382-11 (Water)

Dioxins/Furans

Method: EPA 1613B Sampled: 04/16/2025 13:30
Instrument: AUTOSPEC01 Analyst: jgr Analyzed: 05/05/2025 21:56

MW-CP1-041625-D
25D0382-11 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020B Sampled: 04/16/2025 13:30
Instrument: ICPMS1 Analyst: MCB Analyzed: 05/03/2025 01:32

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 25D0382-11 C 02
Preparation Batch: BNE0049 Sample Size: 25 mL
Prepared: 05/02/2025 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic UCT, Dissolved	7440-38-2	1	0.100	0.200	0.300	ug/L	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-CP7-041625
25D0382-12 (Water)

Dioxins/Furans

Method: EPA 1613B	Preparation Method: EPA 1613	Sampled: 04/16/2025 14:10
Instrument: AUTOSPEC01 Analyst: jgr	Preparation Batch: BND0570	Analyzed: 05/05/2025 22:45
Sample Preparation:	Prepared: 04/28/2025	Extract ID: 25D0382-12 A 01
	Sample Size: 1000 mL	
	Final Volume: 20 uL	
Sample Cleanup:	Cleanup Method: Silica Gel	Extract ID: 25D0382-12 A 01
	Cleanup Batch: CND0126	Initial Volume: 20 uL
	Cleaned: 29-Apr-2025	Final Volume: 20 uL
Sample Cleanup:	Cleanup Method: Florisil	Extract ID: 25D0382-12 A 01
	Cleanup Batch: CND0127	Initial Volume: 20 uL
	Cleaned: 29-Apr-2025	Final Volume: 20 uL

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting		Result	Units	Notes
				EDL	Limit			
2,3,7,8-TCDF			0.655-0.886	2.31	10.0	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	1.84	10.0	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	2.16	10.0	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	2.25	10.0	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	3.04	10.0	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	1.98	10.0	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	2.00	10.0	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	2.01	10.0	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	2.97	10.0	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	2.94	10.0	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	3.08	10.0	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	3.27	10.0	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	2.17	20.0	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	3.77	10.0	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD			0.893-1.208	4.19	10.0	ND	pg/L	U
OCDF			0.757-1.024	5.02	20.0	ND	pg/L	U
OCDD		0.925	0.757-1.024		50.0	8.58	pg/L	J, B

Homologue groups

Total TCDF					10.0	ND	pg/L	U
Total TCDD					10.0	ND	pg/L	U
Total PeCDF					10.0	ND	pg/L	U
Total PeCDD					10.0	ND	pg/L	U
Total HxCDF					10.0	ND	pg/L	U
Total HxCDD					10.0	ND	pg/L	U
Total HpCDF					10.0	ND	pg/L	U
Total HpCDD					10.0	ND	pg/L	U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 3.89
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.00
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND): 3.89
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND): 0.00



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

MW-CP7-041625

25D0382-12 (Water)

Dioxins/Furans

Method: EPA 1613B

Sampled: 04/16/2025 14:10

Instrument: AUTOSPEC01 Analyst: jgr

Analyzed: 05/05/2025 22:45

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.793	0.655-0.886	24-169 %	75.9	%	
<i>13C12-2,3,7,8-TCDD</i>		0.760	0.655-0.886	25-164 %	100	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.611	1.318-1.783	24-185 %	80.1	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.607	1.318-1.783	21-178 %	77.9	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.686	1.318-1.783	25-181 %	74.9	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.536	0.434-0.587	26-152 %	95.2	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.536	0.434-0.587	26-123 %	98.2	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.540	0.434-0.587	28-136 %	88.2	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.507	0.434-0.587	29-147 %	82.8	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.233	1.054-1.426	32-141 %	95.6	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.203	1.054-1.426	28-130 %	93.2	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.403	0.374-0.506	28-143 %	85.8	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.475	0.374-0.506	26-138 %	78.6	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.007	0.893-1.208	23-140 %	90.0	%	
<i>13C12-OCDD</i>		1.005	0.757-1.024	17-157 %	88.2	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	99.1	%	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-CP7-041625
25D0382-12 (Water)

Dioxins/Furans

Method: EPA 1613B Sampled: 04/16/2025 14:10
Instrument: AUTOSPEC01 Analyst: jgr Analyzed: 05/05/2025 22:45

MW-CP7-041625
25D0382-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020B Sampled: 04/16/2025 14:10
Instrument: ICPMS1 Analyst: MCB Analyzed: 05/03/2025 01:35

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 25D0382-12 C 02
Preparation Batch: BNE0049 Sample Size: 25 mL
Prepared: 05/02/2025 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic UCT, Dissolved	7440-38-2	1	0.100	0.200	0.337	ug/L	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-CP3-041625
25D0382-13 (Water)

Dioxins/Furans

Method: EPA 1613B	Preparation Method: EPA 1613	Sample Size: 1050 mL	Sampled: 04/16/2025 16:05
Instrument: AUTOSPEC01 Analyst: jgr	Preparation Batch: BND0571	Final Volume: 20 uL	Analyzed: 05/04/2025 03:39
Sample Preparation:	Prepared: 04/30/2025	Extract ID: 25D0382-13 A 01	
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CNE0001 Cleaned: 01-May-2025	Initial Volume: 20 uL Final Volume: 20 uL	Extract ID: 25D0382-13 A 01
Sample Cleanup:	Cleanup Method: Florisil Cleanup Batch: CNE0002 Cleaned: 01-May-2025	Initial Volume: 20 uL Final Volume: 20 uL	Extract ID: 25D0382-13 A 01

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting		Result	Units	Notes
				EDL	Limit			
2,3,7,8-TCDF			0.655-0.886	2.37	9.52	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	1.80	9.52	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	2.59	9.52	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	2.69	9.52	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	3.17	9.52	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	1.96	9.52	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	1.86	9.52	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	2.07	9.52	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	2.82	9.52	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	3.43	9.52	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	3.50	9.52	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	3.76	9.52	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	2.15	19.0	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	3.28	9.52	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD			0.893-1.208	3.90	9.52	ND	pg/L	U
OCDF			0.757-1.024	3.85	19.0	ND	pg/L	U
OCDD			0.757-1.024	4.39	47.6	ND	pg/L	U

Homologue groups

Total TCDF					9.52	ND	pg/L	U
Total TCDD					9.52	ND	pg/L	U
Total PeCDF					9.52	ND	pg/L	U
Total PeCDD					9.52	ND	pg/L	U
Total HxCDF					9.52	ND	pg/L	U
Total HxCDD					9.52	ND	pg/L	U
Total HpCDF					9.52	ND	pg/L	U
Total HpCDD					9.52	ND	pg/L	U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 4.06
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.00
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND): 4.06
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND): 0.00



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-CP3-041625
25D0382-13 (Water)

Dioxins/Furans

Method: EPA 1613B Sampled: 04/16/2025 16:05
Instrument: AUTOSPEC01 Analyst: jgr Analyzed: 05/04/2025 03:39

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.790	0.655-0.886	24-169 %	65.4	%	
<i>13C12-2,3,7,8-TCDD</i>		0.798	0.655-0.886	25-164 %	87.5	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.612	1.318-1.783	24-185 %	69.7	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.587	1.318-1.783	21-178 %	67.6	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.563	1.318-1.783	25-181 %	66.6	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.527	0.434-0.587	26-152 %	81.0	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.491	0.434-0.587	26-123 %	85.5	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.545	0.434-0.587	28-136 %	84.8	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.492	0.434-0.587	29-147 %	78.8	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.259	1.054-1.426	32-141 %	82.0	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.184	1.054-1.426	28-130 %	83.6	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.500	0.374-0.506	28-143 %	70.9	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.436	0.374-0.506	26-138 %	66.4	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.165	0.893-1.208	23-140 %	82.1	%	
<i>13C12-OCDD</i>		0.976	0.757-1.024	17-157 %	93.5	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	98.0	%	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-CP3-041625
25D0382-13 (Water)

Dioxins/Furans

Method: EPA 1613B Sampled: 04/16/2025 16:05
Instrument: AUTOSPEC01 Analyst: jgr Analyzed: 05/04/2025 03:39

MW-CP3-041625
25D0382-13 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020B Sampled: 04/16/2025 16:05
Instrument: ICPMS2 Analyst: MCB Analyzed: 05/06/2025 19:05

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 25D0382-13 C 02
Preparation Batch: BNE0049 Sample Size: 25 mL
Prepared: 05/02/2025 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic UCT, Dissolved	7440-38-2	1	0.100	0.200	3.07	ug/L	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-CP5-041625
25D0382-14 (Water)

Dioxins/Furans

Method: EPA 1613B	Preparation Method: EPA 1613	Sampled: 04/16/2025 16:10
Instrument: AUTOSPEC01 Analyst: jgr	Preparation Batch: BND0571	Analyzed: 05/04/2025 04:28
Sample Preparation:	Prepared: 04/30/2025	Sample Size: 990 mL
		Final Volume: 20 uL
Sample Cleanup:	Cleanup Method: Silica Gel	Extract ID: 25D0382-14 A 01
	Cleanup Batch: CNE0001	Initial Volume: 20 uL
	Cleaned: 01-May-2025	Final Volume: 20 uL
Sample Cleanup:	Cleanup Method: Florisil	Extract ID: 25D0382-14 A 01
	Cleanup Batch: CNE0002	Initial Volume: 20 uL
	Cleaned: 01-May-2025	Final Volume: 20 uL

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting		Result	Units	Notes
				EDL	Limit			
2,3,7,8-TCDF			0.655-0.886	3.49	10.1	ND	pg/L	U
2,3,7,8-TCDD			0.655-0.886	2.07	10.1	ND	pg/L	U
1,2,3,7,8-PeCDF			1.318-1.783	3.60	10.1	ND	pg/L	U
2,3,4,7,8-PeCDF			1.318-1.783	3.82	10.1	ND	pg/L	U
1,2,3,7,8-PeCDD			1.318-1.783	3.63	10.1	ND	pg/L	U
1,2,3,4,7,8-HxCDF			1.054-1.426	2.65	10.1	ND	pg/L	U
1,2,3,6,7,8-HxCDF			1.054-1.426	2.67	10.1	ND	pg/L	U
2,3,4,6,7,8-HxCDF			1.054-1.426	2.70	10.1	ND	pg/L	U
1,2,3,7,8,9-HxCDF			1.054-1.426	4.40	10.1	ND	pg/L	U
1,2,3,4,7,8-HxCDD			1.054-1.426	5.94	10.1	ND	pg/L	U
1,2,3,6,7,8-HxCDD			1.054-1.426	6.07	10.1	ND	pg/L	U
1,2,3,7,8,9-HxCDD			1.054-1.426	6.52	10.1	ND	pg/L	U
1,2,3,4,6,7,8-HpCDF			0.893-1.208	3.04	20.2	ND	pg/L	U
1,2,3,4,7,8,9-HpCDF			0.893-1.208	4.93	10.1	ND	pg/L	U
1,2,3,4,6,7,8-HpCDD			0.893-1.208	4.84	10.1	ND	pg/L	U
OCDF			0.757-1.024	5.77	20.2	ND	pg/L	U
OCDD			0.757-1.024	5.49	50.5	ND	pg/L	U

Homologue groups

Total TCDF					10.1	ND	pg/L	U
Total TCDD					10.1	ND	pg/L	U
Total PeCDF					10.1	ND	pg/L	U
Total PeCDD					10.1	ND	pg/L	U
Total HxCDF					10.1	ND	pg/L	U
Total HxCDD					10.1	ND	pg/L	U
Total HpCDF					10.1	ND	pg/L	U
Total HpCDD					10.1	ND	pg/L	U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	5.26
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.00
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	5.26
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	0.00



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]
Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

MW-CP5-041625

25D0382-14 (Water)

Dioxins/Furans

Method: EPA 1613B

Sampled: 04/16/2025 16:10

Instrument: AUTOSPEC01 Analyst: jgr

Analyzed: 05/04/2025 04:28

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.765	0.655-0.886	24-169 %	61.8	%	
<i>13C12-2,3,7,8-TCDD</i>		0.783	0.655-0.886	25-164 %	85.8	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.545	1.318-1.783	24-185 %	66.7	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.547	1.318-1.783	21-178 %	61.9	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.617	1.318-1.783	25-181 %	63.9	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.517	0.434-0.587	26-152 %	93.7	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.539	0.434-0.587	26-123 %	94.0	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.498	0.434-0.587	28-136 %	89.6	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.519	0.434-0.587	29-147 %	76.0	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.187	1.054-1.426	32-141 %	86.1	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.302	1.054-1.426	28-130 %	93.0	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.491	0.374-0.506	28-143 %	77.3	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.440	0.374-0.506	26-138 %	67.0	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		0.993	0.893-1.208	23-140 %	81.1	%	
<i>13C12-OCDD</i>		0.844	0.757-1.024	17-157 %	87.5	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	105	%	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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MW-CP5-041625
25D0382-14 (Water)

Dioxins/Furans

Method: EPA 1613B Sampled: 04/16/2025 16:10
Instrument: AUTOSPEC01 Analyst: jgr Analyzed: 05/04/2025 04:28

MW-CP5-041625
25D0382-14 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020B Sampled: 04/16/2025 16:10
Instrument: ICPMS1 Analyst: MCB Analyzed: 05/03/2025 01:43

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 25D0382-14 C 02
Preparation Batch: BNE0049 Sample Size: 25 mL
Prepared: 05/02/2025 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic UCT, Dissolved	7440-38-2	1	0.100	0.200	3.44	ug/L	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BND0570 - EPA 1613B in Water

Instrument: AUTOSPEC01 Analyst: jg

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
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Blank (BND0570-BLK1)

Prepared: 28-Apr-2025 Analyzed: 05-May-2025 11:08

2,3,7,8-TCDF		0.655-0.886	2.37	10.0	ND	pg/L					U
2,3,7,8-TCDD		0.655-0.886	2.13	10.0	ND	pg/L					U
1,2,3,7,8-PeCDF		1.318-1.783	2.18	10.0	ND	pg/L					U
2,3,4,7,8-PeCDF		1.318-1.783	2.22	10.0	ND	pg/L					U
1,2,3,7,8-PeCDD		1.318-1.783	3.90	10.0	ND	pg/L					U
1,2,3,4,7,8-HxCDF		1.054-1.426	2.08	10.0	ND	pg/L					U
1,2,3,6,7,8-HxCDF		1.054-1.426	1.96	10.0	ND	pg/L					U
2,3,4,6,7,8-HxCDF		1.054-1.426	2.02	10.0	ND	pg/L					U
1,2,3,7,8,9-HxCDF		1.054-1.426	2.99	10.0	ND	pg/L					U
1,2,3,4,7,8-HxCDD		1.054-1.426	3.10	10.0	ND	pg/L					U
1,2,3,6,7,8-HxCDD		1.054-1.426	3.08	10.0	ND	pg/L					U
1,2,3,7,8,9-HxCDD		1.054-1.426	3.35	10.0	ND	pg/L					U
1,2,3,4,6,7,8-HpCDF		0.893-1.208	2.30	20.0	ND	pg/L					U
1,2,3,4,7,8,9-HpCDF		0.893-1.208	3.79	10.0	ND	pg/L					U
1,2,3,4,6,7,8-HpCDD		0.893-1.208	3.73	10.0	ND	pg/L					U
OCDF		0.757-1.024	4.57	20.0	ND	pg/L					U
OCDD	0.864	0.757-1.024		50.0	4.94	pg/L					J

Homologue group

Total TCDF				10.0	ND	pg/L					U
Total TCDD				10.0	ND	pg/L					U
Total PeCDF				10.0	ND	pg/L					U
Total PeCDD				10.0	ND	pg/L					U
Total HxCDF				10.0	ND	pg/L					U
Total HxCDD				10.0	ND	pg/L					U
Total HpCDF				10.0	ND	pg/L					U
Total HpCDD				10.0	ND	pg/L					U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 4.48
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.00
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC=ND): 4.48
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0 EDL, EMPC=ND): 0.00

Labeled compounds

13C12-2,3,7,8-TCDF	0.820	0.655-0.886			79.3					24-169 %	
13C12-2,3,7,8-TCDD	0.786	0.655-0.886			99.7					25-164 %	



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BND0570 - EPA 1613B in Water

Instrument: AUTOSPEC01 Analyst: jg

QC Sample/Analyte	Ion Ratio	Ratio Limits	Reporting EDL	Reporting Limit	Result	Units	%REC	RPD	Notes
Blank (BND0570-BLK1)					Prepared: 28-Apr-2025		Analyzed: 05-May-2025 11:08		
13C12-1,2,3,7,8-PeCDF	1.618	1.318-1.783			83.6			24-185 %	
13C12-2,3,4,7,8-PeCDF	1.563	1.318-1.783			85.1			21-178 %	
13C12-1,2,3,7,8-PeCDD	1.668	1.318-1.783			82.7			25-181 %	
13C12-1,2,3,4,7,8-HxCDF	0.549	0.434-0.587			101			26-152 %	
13C12-1,2,3,6,7,8-HxCDF	0.506	0.434-0.587			105			26-123 %	
13C12-2,3,4,6,7,8-HxCDF	0.557	0.434-0.587			94.7			28-136 %	
13C12-1,2,3,7,8,9-HxCDF	0.530	0.434-0.587			94.1			29-147 %	
13C12-1,2,3,4,7,8-HxCDD	1.213	1.054-1.426			102			32-141 %	
13C12-1,2,3,6,7,8-HxCDD	1.136	1.054-1.426			108			28-130 %	
13C12-1,2,3,4,6,7,8-HpCDF	0.425	0.374-0.506			98.0			28-143 %	
13C12-1,2,3,4,7,8,9-HpCDF	0.463	0.374-0.506			85.6			26-138 %	
13C12-1,2,3,4,6,7,8-HpCDD	1.024	0.893-1.208			104			23-140 %	
13C12-OCDD	0.907	0.757-1.024			110			17-157 %	
37Cl4-2,3,7,8-TCDD					104			35-197 %	
LCS (BND0570-BS1)					Prepared: 28-Apr-2025		Analyzed: 05-May-2025 11:56		
2,3,7,8-TCDF	0.739	0.655-0.886		10.0	211	pg/L	106	75-158 %	
2,3,7,8-TCDD	0.867	0.655-0.886		10.0	178	pg/L	89.1	67-158 %	
1,2,3,7,8-PeCDF	1.634	1.318-1.783		10.0	1060	pg/L	106	80-134 %	
2,3,4,7,8-PeCDF	1.729	1.318-1.783		10.0	1070	pg/L	107	68-160 %	
1,2,3,7,8-PeCDD	1.457	1.318-1.783		10.0	1080	pg/L	108	70-142 %	
1,2,3,4,7,8-HxCDF	1.301	1.054-1.426		10.0	1070	pg/L	107	72-134 %	
1,2,3,6,7,8-HxCDF	1.273	1.054-1.426		10.0	1170	pg/L	117	84-130 %	
2,3,4,6,7,8-HxCDF	1.347	1.054-1.426		10.0	1130	pg/L	113	70-156 %	
1,2,3,7,8,9-HxCDF	1.341	1.054-1.426		10.0	1100	pg/L	110	78-130 %	
1,2,3,4,7,8-HxCDD	1.278	1.054-1.426		10.0	1080	pg/L	108	70-164 %	
1,2,3,6,7,8-HxCDD	1.204	1.054-1.426		10.0	1150	pg/L	115	76-134 %	
1,2,3,7,8,9-HxCDD	1.227	1.054-1.426		10.0	1140	pg/L	114	64-162 %	
1,2,3,4,6,7,8-HpCDF	1.039	0.893-1.208		20.0	1110	pg/L	111	82-122 %	
1,2,3,4,7,8,9-HpCDF	1.050	0.893-1.208		10.0	1140	pg/L	114	78-138 %	
1,2,3,4,6,7,8-HpCDD	1.070	0.893-1.208		10.0	1070	pg/L	107	70-140 %	
OCDF	0.846	0.757-1.024		20.0	1780	pg/L	88.9	63-170 %	
OCDD	0.949	0.757-1.024		50.0	1950	pg/L	97.3	78-144 %	B
Labeled compounds									
13C12-2,3,7,8-TCDF	0.763	0.655-0.886			75.6			24-169 %	



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BND0570 - EPA 1613B in Water

Instrument: AUTOSPEC01 Analyst: jg

QC Sample/Analyte	Ion Ratio	Ratio Limits	Reporting EDL	Reporting Limit	Result	Units	%REC	RPD	Notes
LCS (BND0570-BS1)					Prepared: 28-Apr-2025		Analyzed: 05-May-2025 11:56		
13C12-2,3,7,8-TCDD	0.764	0.655-0.886			96.9			25-164 %	
13C12-1,2,3,7,8-PeCDF	1.633	1.318-1.783			79.0			24-185 %	
13C12-2,3,4,7,8-PeCDF	1.595	1.318-1.783			77.8			21-178 %	
13C12-1,2,3,7,8-PeCDD	1.589	1.318-1.783			75.0			25-181 %	
13C12-1,2,3,4,7,8-HxCDF	0.555	0.434-0.587			96.5			26-152 %	
13C12-1,2,3,6,7,8-HxCDF	0.543	0.434-0.587			100			26-123 %	
13C12-2,3,4,6,7,8-HxCDF	0.514	0.434-0.587			88.3			28-136 %	
13C12-1,2,3,7,8,9-HxCDF	0.546	0.434-0.587			85.2			29-147 %	
13C12-1,2,3,4,7,8-HxCDD	1.242	1.054-1.426			94.7			32-141 %	
13C12-1,2,3,6,7,8-HxCDD	1.224	1.054-1.426			96.8			28-130 %	
13C12-1,2,3,4,6,7,8-HpCDF	0.422	0.374-0.506			81.0			28-143 %	
13C12-1,2,3,4,7,8,9-HpCDF	0.432	0.374-0.506			79.1			26-138 %	
13C12-1,2,3,4,6,7,8-HpCDD	1.026	0.893-1.208			92.4			23-140 %	
13C12-OCDD	0.846	0.757-1.024			95.8			17-157 %	
37Cl4-2,3,7,8-TCDD					95.4			35-197 %	
LCS Dup (BND0570-BS1)					Prepared: 28-Apr-2025		Analyzed: 05-May-2025 12:46		
2,3,7,8-TCDF	0.845	0.655-0.886	10.0	205	pg/L	102	75-158 %	2.99	25
2,3,7,8-TCDD	0.725	0.655-0.886	10.0	185	pg/L	92.7	67-158 %	3.94	25
1,2,3,7,8-PeCDF	1.729	1.318-1.783	10.0	980	pg/L	98.0	80-134 %	7.57	25
2,3,4,7,8-PeCDF	1.569	1.318-1.783	10.0	1000	pg/L	100	68-160 %	6.28	25
1,2,3,7,8-PeCDD	1.567	1.318-1.783	10.0	1060	pg/L	106	70-142 %	1.40	25
1,2,3,4,7,8-HxCDF	1.308	1.054-1.426	10.0	1060	pg/L	106	72-134 %	0.94	25
1,2,3,6,7,8-HxCDF	1.305	1.054-1.426	10.0	1140	pg/L	114	84-130 %	2.49	25
2,3,4,6,7,8-HxCDF	1.219	1.054-1.426	10.0	1030	pg/L	103	70-156 %	9.03	25
1,2,3,7,8,9-HxCDF	1.278	1.054-1.426	10.0	1150	pg/L	115	78-130 %	4.59	25
1,2,3,4,7,8-HxCDD	1.224	1.054-1.426	10.0	1040	pg/L	104	70-164 %	3.34	25
1,2,3,6,7,8-HxCDD	1.110	1.054-1.426	10.0	1100	pg/L	110	76-134 %	4.13	25
1,2,3,7,8,9-HxCDD	1.187	1.054-1.426	10.0	1140	pg/L	114	64-162 %	0.29	25
1,2,3,4,6,7,8-HpCDF	1.118	0.893-1.208	20.0	989	pg/L	98.9	82-122 %	11.40	25
1,2,3,4,7,8,9-HpCDF	1.115	0.893-1.208	10.0	1170	pg/L	117	78-138 %	3.14	25
1,2,3,4,6,7,8-HpCDD	1.054	0.893-1.208	10.0	1040	pg/L	104	70-140 %	3.03	25
OCDF	0.944	0.757-1.024	20.0	1860	pg/L	92.9	63-170 %	4.36	25
OCDD	0.886	0.757-1.024	50.0	2020	pg/L	101	78-144 %	3.71	25



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BND0570 - EPA 1613B in Water

Instrument: AUTOSPEC01 Analyst: jg

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
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LCS Dup (BND0570-BSD1)

Prepared: 28-Apr-2025 Analyzed: 05-May-2025 12:46

Labeled compounds											
13C12-2,3,7,8-TCDF	0.856	0.655-0.886			74.3					24-169 %	
13C12-2,3,7,8-TCDD	0.771	0.655-0.886			91.4					25-164 %	
13C12-1,2,3,7,8-PeCDF	1.602	1.318-1.783			77.5					24-185 %	
13C12-2,3,4,7,8-PeCDF	1.626	1.318-1.783			74.1					21-178 %	
13C12-1,2,3,7,8-PeCDD	1.647	1.318-1.783			72.8					25-181 %	
13C12-1,2,3,4,7,8-HxCDF	0.537	0.434-0.587			89.3					26-152 %	
13C12-1,2,3,6,7,8-HxCDF	0.504	0.434-0.587			93.3					26-123 %	
13C12-2,3,4,6,7,8-HxCDF	0.449	0.434-0.587			90.1					28-136 %	
13C12-1,2,3,7,8,9-HxCDF	0.507	0.434-0.587			77.7					29-147 %	
13C12-1,2,3,4,7,8-HxCDD	1.266	1.054-1.426			88.8					32-141 %	
13C12-1,2,3,6,7,8-HxCDD	1.306	1.054-1.426			91.7					28-130 %	
13C12-1,2,3,4,6,7,8-HpCDF	0.406	0.374-0.506			82.1					28-143 %	
13C12-1,2,3,4,7,8,9-HpCDF	0.417	0.374-0.506			71.1					26-138 %	
13C12-1,2,3,4,6,7,8-HpCDD	1.136	0.893-1.208			88.7					23-140 %	
13C12-OCDD	0.921	0.757-1.024			90.4					17-157 %	
37Cl4-2,3,7,8-TCDD					94.2					35-197 %	



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BND0571 - EPA 1613B in Water

Instrument: AUTOSPEC01 Analyst: jg

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BND0571-BLK1)				Prepared: 30-Apr-2025		Analyzed: 04-May-2025 00:21					
2,3,7,8-TCDF		0.655-0.886	3.17	10.0	ND	pg/L					U
2,3,7,8-TCDD	0.562	0.655-0.886		10.0	5.23	pg/L					EMPC, J
1,2,3,7,8-PeCDF		1.318-1.783	3.63	10.0	ND	pg/L					U
2,3,4,7,8-PeCDF		1.318-1.783	4.01	10.0	ND	pg/L					U
1,2,3,7,8-PeCDD	1.213	1.318-1.783		10.0	2.60	pg/L					EMPC, J
1,2,3,4,7,8-HxCDF		1.054-1.426	5.16	10.0	ND	pg/L					U
1,2,3,6,7,8-HxCDF		1.054-1.426	5.27	10.0	ND	pg/L					U
2,3,4,6,7,8-HxCDF		1.054-1.426	5.43	10.0	ND	pg/L					U
1,2,3,7,8,9-HxCDF		1.054-1.426	8.61	10.0	ND	pg/L					U
1,2,3,4,7,8-HxCDD		1.054-1.426	6.87	10.0	ND	pg/L					U
1,2,3,6,7,8-HxCDD		1.054-1.426	7.22	10.0	ND	pg/L					U
1,2,3,7,8,9-HxCDD		1.054-1.426	7.66	10.0	ND	pg/L					U
1,2,3,4,6,7,8-HpCDF		0.893-1.208	4.32	20.0	ND	pg/L					U
1,2,3,4,7,8,9-HpCDF	2.658	0.893-1.208		10.0	6.21	pg/L					EMPC, J
1,2,3,4,6,7,8-HpCDD		0.893-1.208	7.66	10.0	ND	pg/L					U
OCDF		0.757-1.024	8.83	20.0	ND	pg/L					U
OCDD	0.836	0.757-1.024		50.0	12.3	pg/L					J
Homologue group											
Total TCDF				10.0	ND	pg/L					U
Total TCDD				10.0	ND	pg/L					U
Total PeCDF				10.0	ND	pg/L					U
Total PeCDD				10.0	ND	pg/L					U
Total HxCDF				10.0	ND	pg/L					U
Total HxCDD				10.0	ND	pg/L					U
Total HpCDF				10.0	ND	pg/L					U
Total HpCDD				10.0	ND	pg/L					U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 11.1
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 7.90
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC=ND): 6.25
 Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0 EDL, EMPC=ND): 0.00

Labeled compounds

13C12-2,3,7,8-TCDF	0.797	0.655-0.886			69.1					24-169 %
13C12-2,3,7,8-TCDD	0.797	0.655-0.886			90.4					25-164 %



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BND0571 - EPA 1613B in Water

Instrument: AUTOSPEC01 Analyst: jg

QC Sample/Analyte	Ion Ratio	Ratio Limits	Reporting EDL	Reporting Limit	Result	Units	%REC	RPD	Notes
Blank (BND0571-BLK1)					Prepared: 30-Apr-2025		Analyzed: 04-May-2025 00:21		
13C12-1,2,3,7,8-PeCDF	1.576	1.318-1.783			67.6			24-185 %	
13C12-2,3,4,7,8-PeCDF	1.583	1.318-1.783			61.7			21-178 %	
13C12-1,2,3,7,8-PeCDD	1.658	1.318-1.783			59.5			25-181 %	
13C12-1,2,3,4,7,8-HxCDF	0.548	0.434-0.587			94.6			26-152 %	
13C12-1,2,3,6,7,8-HxCDF	0.545	0.434-0.587			87.8			26-123 %	
13C12-2,3,4,6,7,8-HxCDF	0.550	0.434-0.587			80.5			28-136 %	
13C12-1,2,3,7,8,9-HxCDF	0.520	0.434-0.587			74.5			29-147 %	
13C12-1,2,3,4,7,8-HxCDD	1.217	1.054-1.426			91.6			32-141 %	
13C12-1,2,3,6,7,8-HxCDD	1.102	1.054-1.426			82.2			28-130 %	
13C12-1,2,3,4,6,7,8-HpCDF	0.463	0.374-0.506			70.0			28-143 %	
13C12-1,2,3,4,7,8,9-HpCDF	0.462	0.374-0.506			69.0			26-138 %	
13C12-1,2,3,4,6,7,8-HpCDD	1.080	0.893-1.208			84.3			23-140 %	
13C12-OCDD	0.864	0.757-1.024			77.8			17-157 %	
37Cl4-2,3,7,8-TCDD					94.8			35-197 %	
LCS (BND0571-BS1)					Prepared: 30-Apr-2025		Analyzed: 04-May-2025 01:10		
2,3,7,8-TCDF	0.797	0.655-0.886		10.0	202	pg/L	101	75-158 %	
2,3,7,8-TCDD	0.752	0.655-0.886		10.0	182	pg/L	90.8	67-158 %	B
1,2,3,7,8-PeCDF	1.654	1.318-1.783		10.0	975	pg/L	97.5	80-134 %	
2,3,4,7,8-PeCDF	1.666	1.318-1.783		10.0	1090	pg/L	109	68-160 %	
1,2,3,7,8-PeCDD	1.427	1.318-1.783		10.0	1080	pg/L	108	70-142 %	B
1,2,3,4,7,8-HxCDF	1.248	1.054-1.426		10.0	1060	pg/L	106	72-134 %	
1,2,3,6,7,8-HxCDF	1.367	1.054-1.426		10.0	1160	pg/L	116	84-130 %	
2,3,4,6,7,8-HxCDF	1.228	1.054-1.426		10.0	1080	pg/L	108	70-156 %	
1,2,3,7,8,9-HxCDF	1.309	1.054-1.426		10.0	1150	pg/L	115	78-130 %	
1,2,3,4,7,8-HxCDD	1.326	1.054-1.426		10.0	1020	pg/L	102	70-164 %	
1,2,3,6,7,8-HxCDD	1.308	1.054-1.426		10.0	1190	pg/L	119	76-134 %	
1,2,3,7,8,9-HxCDD	1.336	1.054-1.426		10.0	1120	pg/L	112	64-162 %	
1,2,3,4,6,7,8-HpCDF	1.067	0.893-1.208		20.0	1030	pg/L	103	82-122 %	
1,2,3,4,7,8,9-HpCDF	1.018	0.893-1.208		10.0	1000	pg/L	100	78-138 %	B
1,2,3,4,6,7,8-HpCDD	1.022	0.893-1.208		10.0	1060	pg/L	106	70-140 %	
OCDF	0.887	0.757-1.024		20.0	1670	pg/L	83.7	63-170 %	
OCDD	0.838	0.757-1.024		50.0	1970	pg/L	98.3	78-144 %	B
Labeled compounds									
13C12-2,3,7,8-TCDF	0.760	0.655-0.886			66.7			24-169 %	



Floyd - Snider

601 Union Street Two Union Square, Suite 600
Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BND0571 - EPA 1613B in Water

Instrument: AUTOSPEC01 Analyst: jg

QC Sample/Analyte	Ion Ratio	Ratio Limits	Reporting EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BND0571-BS1)			Prepared: 30-Apr-2025		Analyzed: 04-May-2025 01:10						
13C12-2,3,7,8-TCDD	0.782	0.655-0.886			89.6				25-164 %		
13C12-1,2,3,7,8-PeCDF	1.628	1.318-1.783			71.8				24-185 %		
13C12-2,3,4,7,8-PeCDF	1.630	1.318-1.783			67.7				21-178 %		
13C12-1,2,3,7,8-PeCDD	1.511	1.318-1.783			67.2				25-181 %		
13C12-1,2,3,4,7,8-HxCDF	0.540	0.434-0.587			86.7				26-152 %		
13C12-1,2,3,6,7,8-HxCDF	0.532	0.434-0.587			80.8				26-123 %		
13C12-2,3,4,6,7,8-HxCDF	0.554	0.434-0.587			78.7				28-136 %		
13C12-1,2,3,7,8,9-HxCDF	0.526	0.434-0.587			73.4				29-147 %		
13C12-1,2,3,4,7,8-HxCDD	1.241	1.054-1.426			87.3				32-141 %		
13C12-1,2,3,6,7,8-HxCDD	1.190	1.054-1.426			78.5				28-130 %		
13C12-1,2,3,4,6,7,8-HpCDF	0.467	0.374-0.506			69.8				28-143 %		
13C12-1,2,3,4,7,8,9-HpCDF	0.480	0.374-0.506			71.2				26-138 %		
13C12-1,2,3,4,6,7,8-HpCDD	1.090	0.893-1.208			85.3				23-140 %		
13C12-OCDD	0.915	0.757-1.024			86.0				17-157 %		
37Cl4-2,3,7,8-TCDD					104				35-197 %		
LCS Dup (BND0571-BS1)			Prepared: 30-Apr-2025		Analyzed: 04-May-2025 02:00						
2,3,7,8-TCDF	0.719	0.655-0.886		10.0	196	pg/L	97.9	75-158 %	3.24	25	
2,3,7,8-TCDD	0.724	0.655-0.886		10.0	184	pg/L	92.0	67-158 %	1.33	25	B
1,2,3,7,8-PeCDF	1.594	1.318-1.783		10.0	930	pg/L	93.0	80-134 %	4.73	25	
2,3,4,7,8-PeCDF	1.650	1.318-1.783		10.0	1040	pg/L	104	68-160 %	5.12	25	
1,2,3,7,8-PeCDD	1.554	1.318-1.783		10.0	1070	pg/L	107	70-142 %	0.57	25	B
1,2,3,4,7,8-HxCDF	1.277	1.054-1.426		10.0	1040	pg/L	104	72-134 %	1.85	25	
1,2,3,6,7,8-HxCDF	1.350	1.054-1.426		10.0	1120	pg/L	112	84-130 %	3.46	25	
2,3,4,6,7,8-HxCDF	1.304	1.054-1.426		10.0	1070	pg/L	107	70-156 %	0.31	25	
1,2,3,7,8,9-HxCDF	1.250	1.054-1.426		10.0	1130	pg/L	113	78-130 %	2.48	25	
1,2,3,4,7,8-HxCDD	1.234	1.054-1.426		10.0	1020	pg/L	102	70-164 %	0.23	25	
1,2,3,6,7,8-HxCDD	1.175	1.054-1.426		10.0	1100	pg/L	110	76-134 %	8.58	25	
1,2,3,7,8,9-HxCDD	1.302	1.054-1.426		10.0	1090	pg/L	109	64-162 %	2.23	25	
1,2,3,4,6,7,8-HpCDF	1.044	0.893-1.208		20.0	935	pg/L	93.5	82-122 %	9.95	25	
1,2,3,4,7,8,9-HpCDF	1.094	0.893-1.208		10.0	1050	pg/L	105	78-138 %	4.92	25	B
1,2,3,4,6,7,8-HpCDD	1.009	0.893-1.208		10.0	1070	pg/L	107	70-140 %	1.31	25	
OCDF	0.911	0.757-1.024		20.0	1710	pg/L	85.4	63-170 %	2.04	25	
OCDD	0.903	0.757-1.024		50.0	1980	pg/L	99.2	78-144 %	0.89	25	B



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Seattle WA, 98101-2341

Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BND0571 - EPA 1613B in Water

Instrument: AUTOSPEC01 Analyst: jg

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD	RPD Limit	Notes
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LCS Dup (BND0571-BSD1)

Prepared: 30-Apr-2025 Analyzed: 04-May-2025 02:00

Labeled compounds

13C12-2,3,7,8-TCDF	0.734	0.655-0.886			64.2				24-169 %		
13C12-2,3,7,8-TCDD	0.809	0.655-0.886			84.3				25-164 %		
13C12-1,2,3,7,8-PeCDF	1.479	1.318-1.783			72.8				24-185 %		
13C12-2,3,4,7,8-PeCDF	1.577	1.318-1.783			66.7				21-178 %		
13C12-1,2,3,7,8-PeCDD	1.574	1.318-1.783			67.1				25-181 %		
13C12-1,2,3,4,7,8-HxCDF	0.542	0.434-0.587			80.7				26-152 %		
13C12-1,2,3,6,7,8-HxCDF	0.544	0.434-0.587			81.2				26-123 %		
13C12-2,3,4,6,7,8-HxCDF	0.526	0.434-0.587			73.8				28-136 %		
13C12-1,2,3,7,8,9-HxCDF	0.521	0.434-0.587			72.9				29-147 %		
13C12-1,2,3,4,7,8-HxCDD	1.314	1.054-1.426			80.9				32-141 %		
13C12-1,2,3,6,7,8-HxCDD	1.195	1.054-1.426			82.4				28-130 %		
13C12-1,2,3,4,6,7,8-HpCDF	0.446	0.374-0.506			74.7				28-143 %		
13C12-1,2,3,4,7,8,9-HpCDF	0.484	0.374-0.506			71.4				26-138 %		
13C12-1,2,3,4,6,7,8-HpCDD	1.105	0.893-1.208			83.8				23-140 %		
13C12-OCDD	0.981	0.757-1.024			90.5				17-157 %		
37Cl4-2,3,7,8-TCDD					96.8				35-197 %		



Floyd - Snider 601 Union Street Two Union Square, Suite 600 Seattle WA, 98101-2341	Project: Lora Lake 2025 Project Number: [none] Project Manager: Amanda McKay	Reported: 09-May-2025 11:31
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Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BNE0049 - EPA 6020B in Water

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BNE0049-BLK1)						Prepared: 02-May-2025 Analyzed: 02-May-2025 19:40						
Arsenic UCT, Dissolved	75a UCT	ND	0.100	0.200	ug/L							U
LCS (BNE0049-BS1)						Prepared: 02-May-2025 Analyzed: 02-May-2025 19:44						
Arsenic UCT, Dissolved	75a UCT	23.8	0.100	0.200	ug/L	25.0		95.1	80-120			
Duplicate (BNE0049-DUP1)						Source: 25D0382-01 Prepared: 02-May-2025 Analyzed: 03-May-2025 00:59						
Arsenic UCT, Dissolved	75a UCT	0.361	0.100	0.200	ug/L		0.371			2.73	20	
Matrix Spike (BNE0049-MS1)						Source: 25D0382-01 Prepared: 02-May-2025 Analyzed: 03-May-2025 01:03						
Arsenic UCT, Dissolved	75a UCT	24.7	0.100	0.200	ug/L	25.0	0.371	97.5	75-125			

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

Matrix Spike Dup (BNE0049-MSD1)						Source: 25D0382-01 Prepared: 02-May-2025 Analyzed: 03-May-2025 01:07						
Arsenic UCT, Dissolved	75a UCT	24.9	0.100	0.200	ug/L	25.0	0.371	98.1	75-125	0.60	20	

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



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Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

Uncertified Analytes included in this Report

Analysis Matrix & Analyte

None



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Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

Certified Analyses included in this Report

Analysis Matrix & Analyte

Certification Codes

EPA 1613B in Water

2,3,7,8-TCDF	DoD-ELAP,NELAP,WADOE
2,3,7,8-TCDD	DoD-ELAP,NELAP,WADOE
1,2,3,7,8-PeCDF	DoD-ELAP,NELAP,WADOE
2,3,4,7,8-PeCDF	DoD-ELAP,NELAP,WADOE
1,2,3,7,8-PeCDD	DoD-ELAP,NELAP,WADOE
1,2,3,4,7,8-HxCDF	DoD-ELAP,NELAP,WADOE
1,2,3,6,7,8-HxCDF	DoD-ELAP,NELAP,WADOE
2,3,4,6,7,8-HxCDF	DoD-ELAP,NELAP,WADOE
1,2,3,7,8,9-HxCDF	DoD-ELAP,NELAP,WADOE
1,2,3,4,7,8-HxCDD	DoD-ELAP,NELAP,WADOE
1,2,3,6,7,8-HxCDD	DoD-ELAP,NELAP,WADOE
1,2,3,7,8,9-HxCDD	DoD-ELAP,NELAP,WADOE
1,2,3,4,6,7,8-HpCDF	DoD-ELAP,NELAP,WADOE
1,2,3,4,7,8,9-HpCDF	DoD-ELAP,NELAP,WADOE
1,2,3,4,6,7,8-HpCDD	DoD-ELAP,NELAP,WADOE
OCDF	DoD-ELAP,NELAP,WADOE
OCDD	DoD-ELAP,NELAP,WADOE
Total TCDF	DoD-ELAP,NELAP
Total TCDD	DoD-ELAP,NELAP
Total PeCDF	DoD-ELAP,NELAP
Total PeCDD	DoD-ELAP,NELAP
Total HxCDF	DoD-ELAP,NELAP
Total HxCDD	DoD-ELAP,NELAP
Total HpCDF	DoD-ELAP,NELAP
Total HpCDD	DoD-ELAP,NELAP
13C12-2,3,7,8-TCDF	DoD-ELAP
13C12-2,3,7,8-TCDD	DoD-ELAP
13C12-1,2,3,7,8-PeCDF	DoD-ELAP
13C12-2,3,4,7,8-PeCDF	DoD-ELAP
13C12-1,2,3,7,8-PeCDD	DoD-ELAP
13C12-1,2,3,4,7,8-HxCDF	DoD-ELAP



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13C12-1,2,3,6,7,8-HxCDF	DoD-ELAP
13C12-2,3,4,6,7,8-HxCDF	DoD-ELAP
13C12-1,2,3,7,8,9-HxCDF	DoD-ELAP
13C12-1,2,3,4,7,8-HxCDD	DoD-ELAP
13C12-1,2,3,6,7,8-HxCDD	DoD-ELAP
13C12-1,2,3,4,6,7,8-HpCDF	DoD-ELAP
13C12-1,2,3,4,7,8,9-HpCDF	DoD-ELAP
13C12-1,2,3,4,6,7,8-HpCDD	DoD-ELAP
13C12-OCDD	DoD-ELAP
37Cl4-2,3,7,8-TCDD	DoD-ELAP

EPA 6020B in Water

Arsenic-75a UCT	DoD-ELAP,WADOE
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Certifications

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	02/28/2026
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	01/31/2026
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2025
WADOE	WA Dept of Ecology	C558	06/30/2025



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Project: Lora Lake 2025

Project Number: [none]

Project Manager: Amanda McKay

Reported:

09-May-2025 11:31

Notes and Definitions

- * Flagged value is not within established control limits.
- B This analyte was detected in the method blank.
- D The reported value is from a dilution
- EMPC Estimated Maximum Possible Concentration
- J Estimated concentration value detected below the reporting limit.
- U This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- [2C] Indicates this result was quantified on the second column on a dual column analysis.
- ! Indicates that ARL is NOT ACCREDITED for this parameter in samples logged as 'Drinking Water'
- # Indicates that ARL is NOT ACCREDITED for this parameter in this analysis and matrix.

Data Validation Summary

Prepared by: Chell Black

Date: December 19, 2025

Project ID: POS-LLA Lora Lake Apartments Investigation & Site Remediation

Sample Event(s): 2025 Annual Monitoring

Sample Delivery Group(s): 24D0382

Sample Media: Groundwater

A Compliance Screening (USEPA Stage 2B) data quality review was performed on dissolved arsenic data resulting from laboratory analysis. The data were reviewed using guidance and quality control (QC) criteria documented in the Sampling and Analysis Plan/Quality Assurance Project Plan (Appendix B of Floyd|Snider 2010), Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (USEPA 1986), and the National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA 2020).

A total of 13 groundwater samples and 1 field duplicate sample were submitted to Analytical Resources, LLC (ARL) in Tukwila, Washington, for chemical analysis by U.S. Environmental Protection Agency (USEPA) method 6020B. The laboratory reported results under the sample delivery group 24D0382.

DATA QUALITY REVIEW

Field and laboratory QC parameters for all samples met project criteria.

DATA QUALITY SUMMARY

All data are determined to be of acceptable quality for use as reported.

REFERENCES

Floyd|Snider. 2010. *Port of Seattle Lora Lake Apartments Remedial Investigation/Feasibility Study Work Plan*. 30 July.

U.S. Environmental Protection Agency (USEPA). 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. U.S. Prepared by the Office of Solid Waste and Emergency Response. EPA-530/SW-846.

_____. 2020. *National Functional Guidelines for Inorganic Superfund Methods Data Review*. Prepared by the Office of Superfund Remediation and Technology Innovation. EPA-542-R-20-006/OLEM 9240.1-66. November.



ECO-CHEM
Data Quality

DATA VALIDATION REPORT

LORA LAKE – 2025 ANNUAL LAKESIDE GW MONITORING

Prepared for:

Floyd | Snider
601 Union Street, Suite 600
Seattle, WA 98101

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C15231-6

June 8, 2025

Approved for Release:

Christine Ransom
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of data validation performed on groundwater and quality control (QC) sample data for the Lora Lake Lakeside GW Monitoring project. The dioxin data received full validation (EPA Stage 4). A complete list of samples is provided in the Sample Index.

Analytical Resources in Tukwila, WA performed the analyses. The analytical method and EcoChem project chemists are listed in the table below.

ANALYSIS	METHOD	PRIMARY REVIEW	SECONDARY REVIEW
Dioxins	EPA 1613B	E. Clayton	A. Bodkin

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Port of Seattle Lora Lake Parcel, Remedial Investigation/Feasibility Study Work Plan* (Floyd Snider February 11, 2011); *National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review* (USEPA, September 2011); *National Functional Guidelines for High Resolution Superfund Methods Data Review* (USEPA, April 2016, 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R or DNR, the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, reason codes, and validation criteria are included as Appendix A. A Qualified Data Summary Table is included in Appendix B. Data Validation Worksheets will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Lora Lake - Annual Lakeside GW Monitoring 2025

SDG	SAMPLE ID	LAB ID	1613B Dioxins
25D0382	MW-VB2-041525	25D0382-01	✓
25D0382	MW-C1/VB1-041525	25D0382-02	✓
25D0382	HC00-B312-041525	25D0382-05	✓
25D0382	MW-VB3-041525	25D0382-06	✓
25D0382	MW-CP4-041625	25D0382-07	✓
25D0382	MW-CP2-041625	25D0382-08	✓
25D0382	MW-CP6-041625	25D0382-09	✓
25D0382	MW-CP1-041625	25D0382-10	✓
25D0382	MW-CP1-041625-D	25D0382-11	✓
25D0382	MW-CP7-041625	25D0382-12	✓
25D0382	MW-CP3-041625	25D0382-13	✓
25D0382	MW-CP5-041625	25D0382-14	✓

DATA VALIDATION REPORT

Lora Lake - Annual Lakeside GW Monitoring 2025

Dioxin/Furan Compounds by Method 1613B

This report documents the review of analytical data from the analysis of groundwater samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Analytical Resources, LLC, Tukwila, Washington. Refer to the **SAMPLE INDEX** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
25D0382	12 Groundwater	EPA Stage 4

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes, and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

Sample results and related quality control data were received as an electronic data deliverable (EDD) and laboratory report. The EDD was verified against the laboratory report (10%). No discrepancies were noted.

TECHNICAL DATA VALIDATION

The quality control (QC) requirements reviewed are summarized in the following table:

✓	Sample Receipt, Preservation, and Holding Times	✓	Ongoing Precision and Recovery (OPR)
✓	System Performance and Resolution Checks	1	Field Duplicates
✓	Initial Calibration (ICAL)	✓	Target Analyte List
✓	Calibration Verification	✓	Reported Results
2	Blanks (Laboratory and Field)	2	Compound Identification
2	Labeled Compounds	1	Calculation Verification

✓ *Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.*

1 *Quality control results are discussed below, but no data were qualified.*

2 *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Blanks

No field blanks were submitted.

For Method blank BND0570-BLK1 extracted on 4/28/25, there was a positive result for OCDD. Results in the associated field samples that were less than the 5x action level were qualified as not detected (U-7).

For method blank BND0571-BLK1 extracted on 4/30/25, there was a positive result for OCDD. All results for this compound in the associated field samples were greater than the 5x action level; no data were qualified.

Labeled Compound Recovery

Isotope-stable labeled compounds were added to each field and QC sample. With the following exceptions, percent recovery (%R) values for the field samples were within the project specific criteria of 70% - 130%. Native compound results associated with labeled compound outliers were qualified. No action is taken for outliers associated with QC samples.

CLIENT ID	LABELLED COMPOUND WITH OUTLIER	QUALIFIER
MW-C1/VB1-041525	13C12-1,2,3,7,8-PeCDD	UJ-13L
MW-CP3-041625	13C12-2,3,7,8-TCDF	UJ-13L
	13C12-1,2,3,7,8-PeCDF	
	13C12-2,3,4,7,8-PeCDF	
	13C12-1,2,3,7,8-PeCDD	
	13C12-1,2,3,4,7,8,9-HpCDF	
MW-CP5-041625	13C12-2,3,7,8-TCDF	UJ-13L
	13C12-1,2,3,7,8-PeCDF	
	13C12-2,3,4,7,8-PeCDF	
	13C12-1,2,3,7,8-PeCDD	
	13C12-1,2,3,4,7,8,9-HpCDF	
HC00-B312-041525	13C12-2,3,7,8-TCDF	UJ-13L
	13C12-2,3,4,7,8-PeCDF	
	13C12-1,2,3,7,8-PeCDD	
	13C12-1,2,3,4,7,8,9-HpCDF	
MW-VB3-041525	13C12-1,2,3,4,7,8,9-HpCDF	UJ-13L
MW-CP4-041625	13C12-1,2,3,7,8-PeCDF	UJ-13L
MW-CP2-041625	13C12-2,3,7,8-TCDF	UJ-13L
	13C12-1,2,3,7,8-PeCDD	
MW-CP6-041625	13C12-1,2,3,7,8-PeCDD	UJ-13L
MW-CP1-041625	13C12-2,3,7,8-TCDF	UJ-13L
	13C12-1,2,3,7,8-PeCDF	
	13C12-2,3,4,7,8-PeCDF	
MW-CP1-041625-D	13C12-2,3,4,7,8-PeCDF	UJ-13L
	13C12-1,2,3,7,8-PeCDD	
	13C12-1,2,3,4,7,8,9-HpCDF	

Field Duplicates

The relative percent difference (RPD) value control limit is 35% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the difference between the sample and duplicate must be less than the RL.

Samples MW-CP1-041625 and MW-CP1-041625-D were submitted as field duplicates. Field precision was acceptable.

Compound Identification

When a DB5 column is used, the method requires the confirmation of 2,3,7,8-TCDF using an alternate GC column as the DB5 column cannot fully separate 2,3,7,8-TCDF from closely eluting non-target TCDF isomers. The laboratory uses an RTX-Dioxin2 column which provides adequate resolution of the TCDF isomers as indicated by the acceptable peak to valley ratios. Since the 2,3,7,8-TCDF resolution was acceptable, no confirmation was necessary.

The laboratory assigned an "EMPC" flag to indicate that the ion ratio criterion for positive identification was not met. Since the ion abundance ratio is the primary identification criterion for high resolution mass spectroscopy, an outlier indicates that the reported result may be a false positive. These "EMPC" flagged results were qualified as not detected (U-25) at the reported concentration to stay consistent with historical treatment of EMPCs for this project.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the labeled compound and on-going precision and recovery (OPR)/OPR Duplicate recoveries, and precision was acceptable as demonstrated by the OPR/OPR Dup and field duplicate RPD values.

Data were qualified as not detected due to method blank contamination. Detection limits were elevated based on ion ratio outliers. Data were estimated due to labeled compound recovery outliers.

All data, as qualified, are acceptable for use.



APPENDIX A

DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES **Based on National Functional Guidelines**

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.
-----	---

DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r ²)
	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L) ¹ where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L) ¹ where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L) ¹ for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L) ¹ where appropriate
	9A	Precision (Lab QC replicates: LCS/LCSD, MS/MSD, Lab Replicate)
	9B	Precision (Field QC replicates)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L) ¹ where appropriate
	12	Reference Material Use bias flags (H,L) ¹ where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L) ¹ where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L) ¹ where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2 nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
	27	Alkylated PAH compound not calibrated (C1-C4 homologs) - calculated using response from parent compounds
	28	Multiple PCB Aroclors reported in sample (overlapping patterns)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)

¹H = high bias indicated

L = low bias indicated

EcoChem, Inc.

Dioxin/Furan Analysis by HRMS
(Based on NFG 2016 & NFG 2020¹ and Methods EPA 1613B² and SW-846 8290A³)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling				
Cooler/Storage Temperature Preservation	Cooler temps: All 0-6°C Store at laboratory: Waters/Seds/Soils ≤ 6°C & in the dark Tissues < -10°C & in the dark Store extracts at < -10°C in the dark Preservation Aqueous: If residual Cl ₂ is present, 80 mg Thiosulfate per L must be added. If pH is not 7 - 9, it must be adjusted to 7 - 9	If not properly stored or preserved: J(pos)/UJ(ND) if thiosulfate not added if Cl ₂ present; J(pos)/UJ(ND) if pH not adjusted J(pos)/UJ(ND) if cooler temp > 20°C (EcoChem PJ) J(pos)/UJ(ND) if not stored at required temp at laboratory	1	EcoChem PJ, see TM-05 Other guidance (DMMP, QAPP) may require samples to be frozen at -20°C
Holding Time	If properly stored, Extraction (all matrices): 1 year from collection Analysis (all matrices): 1 year from extraction	If HT exceeded: J(pos)/UJ(ND); (or R for non-detects for gross exceedance - PJ)	1	EcoChem PJ, see TM-05 Gross exceedance = > 1 year 2020 NFG Other programs or project guidance documents may have overriding holding time requirements (e.g. SW8290 is 30 days/90 days)
Instrument Performance				
Mass Resolution (PFK)(Tuning) (Static Resolving Power Check)	PFK (Perfluorokerosene) Analyzed prior to ICAL and at the beg/end of each 12 hr. shift. ≥10,000 resolving power at low and high mass in each descriptor group (Table 6 8290 or Table 8 1613 for low and high masses for each descriptor) Lock-mass: for each descriptor, exact m/z within 5 ppm of theoretical m/z (Table 8 of Method 1613B) (e.g. 380.9760 ± 0.0019 amu or 319.8645±0.0016).	J(pos)/No qualifier(ND) all analytes in all samples associated with the tune if < 10,000 PJ if exact mass not within 5 ppm of theoretical mass	24	Notify PM if tune not performed See Figure 2 from Method 8290A for peak profile showing correct zeroing of detector acceptable tune is demonstrated when peak profile w/in 200 ppm window at 5% peak height Note: Laboratory can choose to monitor masses other than those in method tables
Windows Defining Mix (WDM)	Should contain first and last eluting isomers in each homologueous series. Analyze after PFK, before ICAL, and at beginning of each 12 hour period. Peaks for first and last eluters must be within established retention time windows for each selector group (chlorination level)	If not performed at required frequency but calibration OK, qualify only homologue totals: J(pos)/UJ(ND) If peaks are not completely within windows (clipped) then: - If 2,3,7,8 substituted are ok, J(pos)/UJ(ND) homologues (Totals) - If 2,3,7,8 substituted are also affected, J result for native compounds in addition to homologues	24	Notify PM if not performed at required frequency or if major issues affection detection of 2,3,7,8 isomers Objective is to establish retention time windows for each homologue group switching times between homologue groups NFG: WDM and ISC can be combined into one mixture (Column Performance Solution or CPS)
Isomer Specificity Check (ISC)	Must be analyzed before ICAL and CCAL Evaluate using measurements on SICPs Valley ≤ 25% (valley = (x/y)*100%) ⁶ Resolution must be demonstrated for closest eluting peaks to 2378-TCDD or 2378-TCDF	If resolution criteria not met but calibration is OK, J (pos) tetra - hexa and HpCDF congeners (no action for ND) If resolution criteria not met and calibration standards indicate problem in resolving 2,3,7,8-substituted analytes, J(pos)/No action (ND)	24	EcoChem PJ, see TM-05, Rev. 2; NFG has specific criteria for DB-5 and DB-225 columns; however most labs are using an alternate column to DB-5 with adequate resolution. NFG: WDM and ISC can be combined into one mixture (Column Performance Solution or CPS)
Initial Calibration Sensitivity	S/N ratio > 10 for all native and labeled compounds Minimum levels in Method 1613B, Table 2 must be met.	PJ - will depend on severity, J(pos)/UJ(ND) Method requires instrument adjustment and re-analysis	5A	Discuss with PM NFG PJ: if only lowest standard impacted, drop standard and raise the RL
Initial Calibration Selectivity	Ion Abundance Ratio Method 1613B: Table 9 (QC limits) Method 8290A: Table 8	PJ - will depend on severity, J(pos)/No action (ND)	5A	EcoChem PJ, see TM-05, Rev. 2 Discuss with PM

Dioxin/Furan Analysis by HRMS
 (Based on NFG 2016 & NFG 2020¹ and Methods EPA 1613B² and SW-846 8290A³)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Performance (continued)				
Initial Calibration (Minimum 5 stds.) Stability	Method 1613B: %RSD < 20% for native compounds %RSD < 35% for labeled compounds Method 8290A: %RSD < 20% for native compounds %RSD < 30% for labeled compounds	J(pos)/UJ(ND) natives if %RSD > 20% for native No action for labeled	5A	Notify PM Method requires new ICAL EcoChem PJ, see TM-05, Rev. 2
	Lock Mass in Method 1613B Table 8 shall not vary by more than ±20% (> 20% indicates presence of coeluting interferences.)	Notify PM Method requires new ICAL		
	RT for native and labeled is within RTW (Method 1613B, Table 2) and RT between ICAL Stds are consistent. Absolute RT of ¹³ C ₁₂ -1234-TCDD >25 min on DB-5 & >15 min on DB-225	Narrate, no action R(pos)/R(ND) for large shifts		
Continuing Calibration (Prior to each 12 hr. shift) Sensitivity	S/N ratio for CCAL standard > 10	If <10, elevate Det. Limit or R(ND)	5B	
Continuing Calibration (Prior to each 12 hr. shift) Selectivity	Ion Abundance Ratio Method 1613B: Table 8 (required m/z to monitor) Table 9 (QC limits) Method 8290A: Table 8	J(pos) natives in all samples associated with CCAL. No action for labeled congener ion ratio outliers.	25	EcoChem PJ, see TM-05, Rev. 2 Project may have different qualifiers (e.g. UJ < RL)
Continuing Calibration (Prior to each 12 hr. shift) Stability	Beginning of every 12-hour shift (beginning and end for Method 8290A) %D +/-20% for native compounds %D +/-30% for labeled compounds (Must meet limits in Table 6, Method 1613B) If %D in the closing CCAL are within 25%/35%, the mean RF from the two CCAL may be used to calculate samples (Section 8.3.2.4 of 8290)	Labeled compounds: Narrate, no action. Native compounds: 1613: J(pos)/UJ(ND) if %D is outside Table 6 limits J(pos)/R(ND) if %D is +/-75% of Table 6 limits 8290: J(pos)/UJ(ND) if %D = 20% - 75% J(pos)/R(ND) if %D > 75%	5B (H,L)⁴	
	Absolute RT of ¹³ C ₁₂ -1234-TCDD and ¹³ C ₁₂ -123789-HxCDD should be +/- 15 seconds of ICAL RRT for all other compounds must meet criteria listed in Table 2 Method 1613.	Narrate, no action	5B	EcoChem PJ, see TM-05, Rev. 2 If RRT not summarized, spot check chromatograms: native vs labelled. Spot-calculate if RT are not close (RT native in minutes/RT labeled in minutes)
Blank Contamination				
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected compounds > RL	If sample result < RL U(pos) if sample result is < 5x blank conc If sample result > RL U(pos) if result is < 2x blank conc J(pos) if result is > 2x blank conc but ≤ 5x blank conc	7 or 7H	Use either U-7 or J-7H / U-6 or J-6H Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review FB, qualify as needed
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > RL	EMPC values in blank treated as positive result unless project criteria overrides (see comments section)	6 or 6H	Project criteria for EMPC may override this criteria. For example, if project criteria requires U-25 for EMPC < RL, then treat EMPC < RL in blank as non-detect

Dioxin/Furan Analysis by HRMS
 (Based on NFG 2016 & NFG 2020¹ and Methods EPA 1613B² and SW-846 8290A³)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
On-going Precision and Recovery Standard (OPR) (aka blank spike or LCS)	One per lab batch (of ≤ 20 samples) Use most current laboratory control limits or Limits from Table 6 of 1613B	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if %R < 10% - very low bias PJ if not prepared with samples	10 (H,L) ⁴	Qualify all associated samples. Qualifiers assigned if only one of the OPR or OPR Dup %R values is outside of control limits
OPR/OPR Dup (BS/BSD or LCS/LCSD) (RPD)	OPR Dup not typically required for HRMS analyses (OPR demonstrates on-going laboratory precision from batch to batch; OPR Dup demonstrates precision within the batch) One set per matrix and batch of 20 samples RPD < 35%	J(pos) assoc. compound in all samples if RPD > CL	9A	Qualify all associated samples.
MS/MSD (recovery)	MS/MSD not typically required for HRMS analyses. If lab analyzes MS/MSD then one set per matrix per batch (of ≤ 20 samples) Use most current laboratory control limits	J(pos) if both %R > UCL - high bias J(pos)/UJ(ND) if both %R < LCL - low bias J(pos)/R(ND) if both %R < 10% - very low bias J(pos)/UJ(ND) if one > UCL & one < LCL, with no bias PJ if only one %R outlier	8 (H,L) ⁴	No action if only one spike %R is outside criteria. No action if parent concentration is > 4x the amount spiked. Qualify parent sample only unless other QC indicates systematic problems.
MS/MSD (RPD)	MS/MSD not typically required for HRMS analyses. If lab analyzes MS/MSD then one set per matrix per batch (of ≤ 20 samples) Use most current laboratory control limits	J(pos) in parent sample if RPD > CL	9A	Qualify parent sample only. Evaluate all results, even if spike concentration < 4x parent
Lab Duplicate (RPD)	Lab Dup not typically required for HRMS analyses (OPR demonstrates on-going laboratory precision) One per lab batch (of ≤ 20 samples) Use most current laboratory control limits	J(pos)/UJ(ND) if RPD > CL	9A	Qualify parent sample
Labeled Compounds (Internal Standards and cleanup standards)	Added to all samples %R = 40% - 135% in all samples 8290 %R must meet limits in Table 7 Method 1613B	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if %R < 10% - very low bias R(pos)/R(ND) if not added	13 (H,L) ⁴	
	Ion Abundance Ratio Method 1613B: Table 9 (QC limits) Method 8290A: Table 8	PJ - will depend on severity, J(pos)/No action (ND)	13	
Field Duplicates	Solids: RPD <50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR difference < 1X RL (for results < 5X RL)	Narrate and qualify if required by project J(pos)/UJ (ND) - qualify parent and duplicate only Evaluate precision for Total Homologues (TEQ, if reported, are not evaluated or qualified)	9B	See TM24 for additional guidance Project control limits may override EcoChem PJ limits

Dioxin/Furan Analysis by HRMS
(Based on NFG 2016 & NFG 2020¹ and Methods EPA 1613B² and SW-846 8290A³)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Quantitation/Identification				
Signal/Noise	All ions for each isomer must maximize within +/- 2 seconds. S/N ratio >2.5 (labeled/internal stds >10)	Narrate in report; qualify if necessary J(pos) for ion ratio outliers.	25	EcoChem PJ, see TM-05, Rev. 2 Stage 4 Data package should have SICP ⁵ for two target analyte channels, labeled standards, diphenyl ether trace, and lock-mass trace.
Retention Times	RRTs w/in limits in Table 2 of 1613B Quantitation ions maximize within the same 2 seconds	If RRT outside of limits: NJ(pos) or U(pos) at reported concentration if it is determined that the peak has been misidentified. If Quantitation ions don't maximize in the same 2 seconds: NJ(pos) or U(pos) at reported concentration	24	
EMPC (estimated maximum possible concentration)	Ion ratios must meet criteria listed in Table 8 Method 8290, or Table 9 of 1613B If quantitation identification criteria (ion abundance ratio) are not met, laboratory should report an EMPC value.	If laboratory reports EMPCs as detects, qualify the native compound and total homologue groups as J(pos) If laboratory reports EMPC as ND, notify PM to make sure that this is appropriate for the project.	25	See TM-18 Default decision is to treat EMPCs as detects. Some projects/programs treat EMPCs as non-detects. Some labs report 2 results for total homologues: one with EMPC as a detect and one with EMPC set to zero. Qualifiers for totals may be project dependent.
Interferences	Interferences from chlorodiphenyl ether compounds	Stage 4 DV: If raw abundance > 10% of target compound raw abundance UJ(pos) If raw abundance ≤ 10% of target compound raw abundance J(pos) Stage 2A, 2B DV: J(pos)	23H ⁴	See TM-16
		If laboratory did not monitor PCDPE interference ions, J(pos)/UJ(ND) all target and total furan results and discuss non-conformance in report.	14	
	Lock masses baseline must not deviate +/- 20% Exact m/z within 5 ppm of theoretical m/z from values in Table 8 of 1613B	For associated analytes (deflection at same RT as target analyte) J(pos) if present; Reject (R) if deflection > 50%	14L ⁴ 14	See TM-17 No bias for rejected data
Second Column Confirmation	If laboratory uses DB-5 column, all 2,3,7,8-TCDF hits must be confirmed on a DB-225 (or equiv) column. All QC criteria must also be met for the confirmation analysis.	Report the DB-225 value. DNR the DB-5 value If not performed use PJ.	11	EcoChem PJ, see TM-05, Rev. 2 Some labs only confirm 2,3,7,8-TCDF if the DB-5 result is >RL. This is OK as results < RL are already J-flagged. Some labs use columns that resolve peaks - no confirmation needed
Calculation Check	Check 10% of field & QC sample results	Contact laboratory for resolution and/or corrective action	na	Full data validation only. Focus on congeners with higher toxic equivalency factors (TEF): these are the Tetras and Pentas. Also recalculate one EMPC (if reported) and one EDL
Electronic Data Deliverable (EDD)				
Verification of EDD to hardcopy data	Verify at 10% unless problems noted; then increase level up to 100% for next several packages.	Depending on scope of problem, correct at EcoChem with PM approval (minor issues) or resubmittal by laboratory (major issues).	na	EcoChem Project Manager and/or Database Administrator will work with lab to provide long-term corrective action.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	Use "DNR" to flag results that will not be reported.	11 (or reason code for QC outlier)	

descriptor group and function group may be used interchangeably

¹ National Functional Guidelines for High Resolution Superfund Methods Data Review, April 2016 & November 2020

² EPA Method 1613, Rev.B, Tetra-through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGS/HRMS, October 1994

³ Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS), USEPA SW-846, Method 8290A, February 2007

⁴ NFG 2020 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

⁵ SICPs = Selected Ion Current Profiles

⁶ x = height from valley of least resolved adjacent isomer to baseline; y = peak height of the shorter for the adjacent peaks



APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Lora Lake - Annual Lakeside GW Monitoring 2025

SAMPLE ID	LAB ID	METHOD	ANALYTE	RESULT	UNITS	LAB QUAL	DV QUAL	DV CODE
MW-VB2-041525	25D0382-01	EPA1613B	2,3,4,7,8-PeCDF	2.11	pg/L	NUJ,J	U	25
MW-VB2-041525	25D0382-01	EPA1613B	OCDD	6.05	pg/L	NUJ,J,B	U	25
MW-C1/VB1-041525	25D0382-02	EPA1613B	1,2,3,7,8-PeCDD	3.49	pg/L	U	UJ	13L
HC00-B312-041525	25D0382-05	EPA1613B	2,3,7,8-TCDF	2.94	pg/L	U	UJ	13L
HC00-B312-041525	25D0382-05	EPA1613B	2,3,4,7,8-PeCDF	2.18	pg/L	U	UJ	13L
HC00-B312-041525	25D0382-05	EPA1613B	1,2,3,7,8-PeCDD	4.28	pg/L	U	UJ	13L
HC00-B312-041525	25D0382-05	EPA1613B	1,2,3,4,7,8,9-HpCDF	5.14	pg/L	U	UJ	13L
HC00-B312-041525	25D0382-05	EPA1613B	OCDD	7.91	pg/L	J,B	U	7
MW-VB3-041525	25D0382-06	EPA1613B	1,2,3,4,7,8,9-HpCDF	4.15	pg/L	U	UJ	13L
MW-CP4-041625	25D0382-07	EPA1613B	1,2,3,7,8-PeCDF	2.88	pg/L	U	UJ	13L
MW-CP2-041625	25D0382-08	EPA1613B	2,3,7,8-TCDF	2.65	pg/L	U	UJ	13L
MW-CP2-041625	25D0382-08	EPA1613B	1,2,3,7,8-PeCDD	3.42	pg/L	U	UJ	13L
MW-CP6-041625	25D0382-09	EPA1613B	1,2,3,7,8-PeCDD	3.08	pg/L	U	UJ	13L
MW-CP1-041625	25D0382-10	EPA1613B	2,3,7,8-TCDF	2.37	pg/L	U	UJ	13L
MW-CP1-041625	25D0382-10	EPA1613B	1,2,3,7,8-PeCDF	2.76	pg/L	U	UJ	13L
MW-CP1-041625	25D0382-10	EPA1613B	2,3,4,7,8-PeCDF	2.93	pg/L	U	UJ	13L
MW-CP1-041625-D	25D0382-11	EPA1613B	2,3,4,7,8-PeCDF	2.91	pg/L	U	UJ	13L
MW-CP1-041625-D	25D0382-11	EPA1613B	1,2,3,7,8-PeCDD	3.96	pg/L	U	UJ	13L
MW-CP1-041625-D	25D0382-11	EPA1613B	1,2,3,4,7,8,9-HpCDF	5.43	pg/L	U	UJ	13L
MW-CP7-041625	25D0382-12	EPA1613B	OCDD	8.58	pg/L	J,B	U	7
MW-CP3-041625	25D0382-13	EPA1613B	2,3,7,8-TCDF	2.37	pg/L	U	UJ	13L
MW-CP3-041625	25D0382-13	EPA1613B	1,2,3,7,8-PeCDF	2.59	pg/L	U	UJ	13L
MW-CP3-041625	25D0382-13	EPA1613B	2,3,4,7,8-PeCDF	2.69	pg/L	U	UJ	13L
MW-CP3-041625	25D0382-13	EPA1613B	1,2,3,7,8-PeCDD	3.17	pg/L	U	UJ	13L
MW-CP3-041625	25D0382-13	EPA1613B	1,2,3,4,7,8,9-HpCDF	3.28	pg/L	U	UJ	13L
MW-CP5-041625	25D0382-14	EPA1613B	2,3,7,8-TCDF	3.49	pg/L	U	UJ	13L
MW-CP5-041625	25D0382-14	EPA1613B	1,2,3,7,8-PeCDF	3.60	pg/L	U	UJ	13L
MW-CP5-041625	25D0382-14	EPA1613B	2,3,4,7,8-PeCDF	3.82	pg/L	U	UJ	13L
MW-CP5-041625	25D0382-14	EPA1613B	1,2,3,7,8-PeCDD	3.63	pg/L	U	UJ	13L
MW-CP5-041625	25D0382-14	EPA1613B	1,2,3,4,7,8,9-HpCDF	4.93	pg/L	U	UJ	13L



November 24, 2025

**Enthalpy Analytical - El Dorado Hills
Work Order No. 2510232**

Ms. Amanda McKay
Floyd Snider
601 Union Street, Suite 601
Seattle, WA 98101

Dear Ms. McKay,

Enclosed are the results for the sample set received at Enthalpy Analytical - EDH on October 21, 2025 under your Project Name 'POS-LLA'.

Enthalpy Analytical - EDH is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at kathy.zipp@enthalpy.com.

Thank you for choosing Enthalpy Analytical - EDH as part of your analytical support team.

Sincerely,

A handwritten signature in black ink that reads "Kathy Zipp".

Kathy Zipp
Project Manager

Enthalpy Analytical -EDH certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Enthalpy Analytical -EDH.

Enthalpy Analytical - EDH Work Order No. 2510232

Case Narrative

Sample Condition on Receipt:

One groundwater sample was received and stored securely in accordance with Enthalpy Analytical - EDH standard operating procedures and EPA methodology. The sample was received in good condition and within the method temperature requirements.

Analytical Notes:

EPA Method 1613B

The sample was extracted and analyzed for tetra-through-octa chlorinated dioxins and furans by EPA Method 1613B using a ZB-DIOXIN GC column.

Holding Times

The sample was extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected above the sample quantitation limits in the Method Blank. The OPR recoveries were within the method acceptance criteria.

Labeled standard recoveries for all QC and field samples were within method acceptance criteria.

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Sample Inventory Report

Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2510232-01	MW-CP4-041625	16-Apr-25 11:45	21-Oct-25 09:17	Amber Glass NM Bottle, 1L

ANALYTICAL RESULTS

Sample ID: Method Blank
EPA Method 1613B

Client Data		Laboratory Data				
Name:	Floyd Snider	Lab Sample:	B25K128-BLK1		Date Extracted:	18-Nov-25
Project:	POS-LLA	QC Batch:	B25K128		Column:	ZB-DIOXIN
Matrix:	Aqueous	Sample Size:	1.00 L			

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
2,3,7,8-TCDD	ND	0.266	3.92			20-Nov-25 13:53	1
1,2,3,7,8-PeCDD	ND	0.481	8.32			20-Nov-25 13:53	1
1,2,3,4,7,8-HxCDD	ND	0.612	6.58			20-Nov-25 13:53	1
1,2,3,6,7,8-HxCDD	ND	0.692	5.81			20-Nov-25 13:53	1
1,2,3,7,8,9-HxCDD	ND	0.646	5.99			20-Nov-25 13:53	1
1,2,3,4,6,7,8-HpCDD	ND		5.53	0.514		20-Nov-25 13:53	1
OCDD	ND	1.04	16.3			20-Nov-25 13:53	1
2,3,7,8-TCDF	ND	0.333	1.74			20-Nov-25 13:53	1
1,2,3,7,8-PeCDF	ND	0.337	6.71			20-Nov-25 13:53	1
2,3,4,7,8-PeCDF	ND	0.314	7.55			20-Nov-25 13:53	1
1,2,3,4,7,8-HxCDF	ND	0.550	6.81			20-Nov-25 13:53	1
1,2,3,6,7,8-HxCDF	ND	0.549	6.11			20-Nov-25 13:53	1
2,3,4,6,7,8-HxCDF	ND	0.589	5.93			20-Nov-25 13:53	1
1,2,3,7,8,9-HxCDF	ND	0.746	6.34			20-Nov-25 13:53	1
1,2,3,4,6,7,8-HpCDF	ND	0.398	6.28			20-Nov-25 13:53	1
1,2,3,4,7,8,9-HpCDF	ND	0.536	7.33			20-Nov-25 13:53	1
OCDF	ND		13.6	0.749		20-Nov-25 13:53	1

Toxic Equivalent

TEQMinWHO2005Dioxin	0.00
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Totals

Total TCDD	ND	0.266					
Total PeCDD	ND	0.481					
Total HxCDD	ND	0.692					
Total HpCDD	ND			0.514			
Total TCDF	ND			0.943			
Total PeCDF	ND	0.337					
Total HxCDF	ND	0.746					
Total HpCDF	ND	0.536					

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-2,3,7,8-TCDD	IS	86.7	25 - 164		20-Nov-25 13:53	1
13C-1,2,3,7,8-PeCDD	IS	72.8	25 - 181		20-Nov-25 13:53	1
13C-1,2,3,4,7,8-HxCDD	IS	76.1	32 - 141		20-Nov-25 13:53	1
13C-1,2,3,6,7,8-HxCDD	IS	69.3	28 - 130		20-Nov-25 13:53	1
13C-1,2,3,7,8,9-HxCDD	IS	74.2	32 - 141		20-Nov-25 13:53	1
13C-1,2,3,4,6,7,8-HpCDD	IS	73.9	23 - 140		20-Nov-25 13:53	1
13C-OCDD	IS	58.8	17 - 157		20-Nov-25 13:53	1
13C-2,3,7,8-TCDF	IS	74.1	24 - 169		20-Nov-25 13:53	1
13C-1,2,3,7,8-PeCDF	IS	83.9	24 - 185		20-Nov-25 13:53	1
13C-2,3,4,7,8-PeCDF	IS	77.9	21 - 178		20-Nov-25 13:53	1
13C-1,2,3,4,7,8-HxCDF	IS	69.9	26 - 152		20-Nov-25 13:53	1
13C-1,2,3,6,7,8-HxCDF	IS	71.0	26 - 123		20-Nov-25 13:53	1
13C-2,3,4,6,7,8-HxCDF	IS	73.5	28 - 136		20-Nov-25 13:53	1
13C-1,2,3,7,8,9-HxCDF	IS	73.3	29 - 147		20-Nov-25 13:53	1
13C-1,2,3,4,6,7,8-HpCDF	IS	62.6	28 - 143		20-Nov-25 13:53	1
13C-1,2,3,4,7,8,9-HpCDF	IS	64.6	26 - 138		20-Nov-25 13:53	1
13C-OCDF	IS	56.1	17 - 157		20-Nov-25 13:53	1
37Cl-2,3,7,8-TCDD	CRS	78.7	35 - 197		20-Nov-25 13:53	1

EDL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration
MDL - Method Detection Limit

Sample ID: OPR
EPA Method 1613B
Client Data

Name: Floyd Snider
Project: POS-LLA
Matrix: Aqueous

Laboratory Data

Lab Sample: B25K128-BS1
QC Batch: B25K128
Sample Size: 1.00 L
Date Extracted: 18-Nov-25 09:05
Column: ZB-DIOXIN

Analyte	Amt Found (pg/L)	Spike Amt	% Recovery	Limits	Qualifiers	Analyzed	Dilution
2,3,7,8-TCDD	166	200	83.0	67-158		20-Nov-25 12:20	1
1,2,3,7,8-PeCDD	1040	1000	104	70-142		20-Nov-25 12:20	1
1,2,3,4,7,8-HxCDD	1040	1000	104	70-164		20-Nov-25 12:20	1
1,2,3,6,7,8-HxCDD	1110	1000	111	76-134		20-Nov-25 12:20	1
1,2,3,7,8,9-HxCDD	1030	1000	103	64-162		20-Nov-25 12:20	1
1,2,3,4,6,7,8-HpCDD	966	1000	96.6	70-140		20-Nov-25 12:20	1
OCDD	2150	2000	108	78-144		20-Nov-25 12:20	1
2,3,7,8-TCDF	195	200	97.6	75-158		20-Nov-25 12:20	1
1,2,3,7,8-PeCDF	944	1000	94.4	80-134		20-Nov-25 12:20	1
2,3,4,7,8-PeCDF	1000	1000	100	68-160		20-Nov-25 12:20	1
1,2,3,4,7,8-HxCDF	1100	1000	110	72-134		20-Nov-25 12:20	1
1,2,3,6,7,8-HxCDF	1060	1000	106	84-130		20-Nov-25 12:20	1
2,3,4,6,7,8-HxCDF	1050	1000	105	70-156		20-Nov-25 12:20	1
1,2,3,7,8,9-HxCDF	1050	1000	105	78-130		20-Nov-25 12:20	1
1,2,3,4,6,7,8-HpCDF	1150	1000	115	82-122		20-Nov-25 12:20	1
1,2,3,4,7,8,9-HpCDF	1170	1000	117	78-138		20-Nov-25 12:20	1
OCDF	2240	2000	112	63-170		20-Nov-25 12:20	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-2,3,7,8-TCDD	IS	82.5	20-175		20-Nov-25 12:20	1
13C-1,2,3,7,8-PeCDD	IS	70.0	21-227		20-Nov-25 12:20	1
13C-1,2,3,4,7,8-HxCDD	IS	73.1	21-193		20-Nov-25 12:20	1
13C-1,2,3,6,7,8-HxCDD	IS	66.2	25-163		20-Nov-25 12:20	1
13C-1,2,3,7,8,9-HxCDD	IS	71.7	21-193		20-Nov-25 12:20	1
13C-1,2,3,4,6,7,8-HpCDD	IS	71.5	26-166		20-Nov-25 12:20	1
13C-OCDD	IS	56.3	13-199		20-Nov-25 12:20	1
13C-2,3,7,8-TCDF	IS	71.4	22-152		20-Nov-25 12:20	1
13C-1,2,3,7,8-PeCDF	IS	80.3	21-192		20-Nov-25 12:20	1
13C-2,3,4,7,8-PeCDF	IS	75.3	13-328		20-Nov-25 12:20	1
13C-1,2,3,4,7,8-HxCDF	IS	67.7	19-202		20-Nov-25 12:20	1
13C-1,2,3,6,7,8-HxCDF	IS	68.7	21-159		20-Nov-25 12:20	1
13C-2,3,4,6,7,8-HxCDF	IS	70.0	22-176		20-Nov-25 12:20	1
13C-1,2,3,7,8,9-HxCDF	IS	71.1	17-205		20-Nov-25 12:20	1
13C-1,2,3,4,6,7,8-HpCDF	IS	60.7	21-158		20-Nov-25 12:20	1
13C-1,2,3,4,7,8,9-HpCDF	IS	64.1	20-186		20-Nov-25 12:20	1
13C-OCDF	IS	54.4	13-199		20-Nov-25 12:20	1
37Cl-2,3,7,8-TCDD	CRS	75.9	31-191		20-Nov-25 12:20	1

Sample ID: MW-CP4-041625

EPA Method 1613B

Client Data		Laboratory Data			
Name:	Floyd Snider	Lab Sample:	2510232-01	Date Received:	21-Oct-25 09:17
Project:	POS-LLA	QC Batch:	B25K128	Date Extracted:	18-Nov-25
Matrix:	Groundwater	Sample Size:	1.04 L	Column:	ZB-DIOXIN
Date Collected:	16-Apr-25 11:45				

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
2,3,7,8-TCDD	ND	0.336	3.78			20-Nov-25 19:18	1
1,2,3,7,8-PeCDD	ND	0.747	8.02			20-Nov-25 19:18	1
1,2,3,4,7,8-HxCDD	ND	0.681	6.34			20-Nov-25 19:18	1
1,2,3,6,7,8-HxCDD	ND	0.775	5.60			20-Nov-25 19:18	1
1,2,3,7,8,9-HxCDD	ND	0.686	5.78			20-Nov-25 19:18	1
1,2,3,4,6,7,8-HpCDD	ND	0.663	5.33			20-Nov-25 19:18	1
OCDD	ND		15.7	1.76		20-Nov-25 19:18	1
2,3,7,8-TCDF	ND	0.456	1.68			20-Nov-25 19:18	1
1,2,3,7,8-PeCDF	ND	0.380	6.47			20-Nov-25 19:18	1
2,3,4,7,8-PeCDF	ND	0.330	7.28			20-Nov-25 19:18	1
1,2,3,4,7,8-HxCDF	ND	0.569	6.57			20-Nov-25 19:18	1
1,2,3,6,7,8-HxCDF	ND	0.560	5.89			20-Nov-25 19:18	1
2,3,4,6,7,8-HxCDF	ND	0.583	5.72			20-Nov-25 19:18	1
1,2,3,7,8,9-HxCDF	ND	0.536	6.11			20-Nov-25 19:18	1
1,2,3,4,6,7,8-HpCDF	ND	0.507	6.06			20-Nov-25 19:18	1
1,2,3,4,7,8,9-HpCDF	ND	0.657	7.07			20-Nov-25 19:18	1
OCDF	ND	0.972	13.1			20-Nov-25 19:18	1

Toxic Equivalent

TEQMinWHO2005Dioxin	0.00
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Totals

Total TCDD	ND	0.336					
Total PeCDD	ND	0.747					
Total HxCDD	ND	0.775					
Total HpCDD	ND	0.663					
Total TCDF	ND			0.741			
Total PeCDF	ND	0.380					
Total HxCDF	ND	0.583					
Total HpCDF	ND	0.657					

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-2,3,7,8-TCDD	IS	83.3	25 - 164		20-Nov-25 19:18	1
13C-1,2,3,7,8-PeCDD	IS	68.5	25 - 181		20-Nov-25 19:18	1
13C-1,2,3,4,7,8-HxCDD	IS	67.7	32 - 141		20-Nov-25 19:18	1
13C-1,2,3,6,7,8-HxCDD	IS	61.7	28 - 130		20-Nov-25 19:18	1
13C-1,2,3,7,8,9-HxCDD	IS	66.4	32 - 141		20-Nov-25 19:18	1
13C-1,2,3,4,6,7,8-HpCDD	IS	67.5	23 - 140		20-Nov-25 19:18	1
13C-OCDD	IS	53.7	17 - 157		20-Nov-25 19:18	1
13C-2,3,7,8-TCDF	IS	70.5	24 - 169		20-Nov-25 19:18	1
13C-1,2,3,7,8-PeCDF	IS	78.6	24 - 185		20-Nov-25 19:18	1
13C-2,3,4,7,8-PeCDF	IS	73.6	21 - 178		20-Nov-25 19:18	1
13C-1,2,3,4,7,8-HxCDF	IS	61.6	26 - 152		20-Nov-25 19:18	1
13C-1,2,3,6,7,8-HxCDF	IS	63.0	26 - 123		20-Nov-25 19:18	1
13C-2,3,4,6,7,8-HxCDF	IS	65.3	28 - 136		20-Nov-25 19:18	1
13C-1,2,3,7,8,9-HxCDF	IS	64.9	29 - 147		20-Nov-25 19:18	1
13C-1,2,3,4,6,7,8-HpCDF	IS	55.9	28 - 143		20-Nov-25 19:18	1
13C-1,2,3,4,7,8,9-HpCDF	IS	57.1	26 - 138		20-Nov-25 19:18	1
13C-OCDF	IS	51.1	17 - 157		20-Nov-25 19:18	1
37Cl-2,3,7,8-TCDD	CRS	75.7	35 - 197		20-Nov-25 19:18	1

EDL - Sample specific estimated detection limit
 EMPC - Estimated maximum possible concentration
 MDL - Method Detection Limit

DATA QUALIFIERS & ABBREVIATIONS

B	Compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection Limit
E	Concentration exceeded the calibration range
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	Estimated Concentration below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
MDL	Method Detection Limit
NA	Not Applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	Concentration may include contribution from chlorinated diphenyl ether(s).
Q	Ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit (MRL)
TEQ	Toxic Equivalency, sum of the toxic equivalency factors (TEF) multiplied by the sample concentrations.
TEQMax	TEQ calculated using the detection limit as the concentration for non-detects
TEQMin	TEQ calculated using zero as the concentration for non-detects
TEQRisk	TEQ calculated using $\frac{1}{2}$ the detection limit as the concentration for non-detects
U	Not Detected (specific projects only)
*	See Cover Letter

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

Enthalpy Analytical - EDH Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	21-023-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	2211390
Nevada Division of Environmental Protection	CA00413
New Hampshire Environmental Accreditation Program	207721
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-021
Texas Commission on Environmental Quality	T104704189-22-13
Vermont Department of Health	VT-4042
Virginia Department of General Services	11276
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters can be found at Enthalpy.com/Resources/Accreditations.

Chain of Custody Record & Laboratory Analysis Request

2510232 3.5°C



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

ARI Assigned Number: 212023		Turn-around Requested: Standard			Page 1 of 2	
ARI Client Company: Floyd Snider		Phone: (206) 292-2078			Date: 4/17/25	Ice Present?
Client Contact: Amanda McKay		Amanda McKay (Floyd Snider Co)			No. of Coolers: 4	Cooler Temps: 0.3, 6.4°C
Client Project Name: POS - LLA		Analysis Requested				Notes/Comments
Client Project #		Samplers: Meg McCann, Charlie Lentz				As samples to be lab filtered and preserved
Sample ID	Date	Time	Matrix	No. Containers		
					DISINTEGRATED	
					ARSENIC	
					BARITUMS	
					FURANS	
MW-VB2-041525	4/15/25	9:15	GW	3	X	X
MW-C1/VB1-041525		10:10	GW	3	X	X
MW-C2-041525		11:05	GW	1	X	
MW-C3-041525		11:10	GW	1	X	
HCOO-B312-041525		16:05	GW	3	X	X
MW-VB3-041525		16:25	GW	3	X	X
MW-CP4-041625	4/16/25	11:45	GW	3	X	X
MW-CP2-041625		12:00	GW	3	X	X
MW-CP6-041625		12:40	GW	3	X	X
MW-CP1-041625		13:15	GW	3	X	X
Comments/Special Instructions		Relinquished by (Signature): [Signature]	Received by (Signature): [Signature]		Relinquished by (Signature): [Signature]	Received by (Signature): [Signature]
		Printed Name: Meg McCann	Printed Name: Sydney Acevedo		Printed Name: Sydney Acevedo	Printed Name: Keliia Wadsworth
		Company: Floyd Snider	Company: ARLLC		Company: ARLLC	Company: Entralpy - EDH
		Date & Time: 4/17/25 @	Date & Time: 4/17/25 0833		Date & Time: 10/20/25 1110	Date & Time: 10/21/25 0917

A) MW-VB2-041525
A) MW-CP2-041625

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.

A) Sample not received

CoC/Label Reconciliation Report WO# 2510232

LabNumber	CoC Sample ID	SampleAlias	Sample Date/Time	Container	BaseMatrix	Sample Comments
2510232-01	A MW-CP4-041625	<input checked="" type="checkbox"/> A	16-Apr-25 11:45 <input checked="" type="checkbox"/>	Amber Glass NM Bottle, 1L	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label.
Any discrepancies are noted in the following columns.

CONDITION	Yes	No	NA
Sample Container Intact?	<input checked="" type="checkbox"/>		
Sample Container(s) Custody Seals Intact?			<input checked="" type="checkbox"/>
Custody Seals On Cooler Intact?	<input checked="" type="checkbox"/>		
Adequate Sample Volume?	<input checked="" type="checkbox"/>		
Container Type Appropriate for Analysis(es)?	<input checked="" type="checkbox"/>		

Comments:

A) no backing volume

Preservation Documented: Na2S2O3 Trizma NH4CH3CO2 None Other

Verified by/Date: KA 10/23/25 Originally labeled and reconciled
by KA on 10/21/25



DATA VALIDATION REPORT

LORA LAKE – 2025 ANNUAL LAKESIDE GROUNDWATER CONFIRMATION ANALYSIS

Prepared for:

Floyd | Snider
601 Union Street, Suite 600
Seattle, WA 98101

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C15231-7

December 5, 2025

Approved for Release:

A handwritten signature in black ink, appearing to read "Christine Ransom". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Christine Ransom
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of data validation performed on the confirmation analysis of one groundwater and quality control (QC) sample data for the Lora Lake Lakeside 2025 GW Monitoring event. The dioxin data received full validation (EPA Stage 4). A cross reference of sample IDs is provided in the **Sample Index**.

Enthalpy Analytical, El Dorado Hills, California performed the analysis. The analytical method and EcoChem project chemists are listed in the table below.

ANALYSIS	METHOD	PRIMARY REVIEW	SECONDARY REVIEW
Dioxins	EPA 1613B	A. Bodkin	C. Ransom

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Port of Seattle Lora Lake Parcel, Remedial Investigation/Feasibility Study Work Plan* (Floyd Snider February 11, 2011); *National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review* (USEPA, September 2011); *National Functional Guidelines for High Resolution Superfund Methods Data Review* (USEPA, April 2016, 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R or DNR, the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above. No qualifiers were assigned to this data set.

Data qualifier definitions, reason codes, and validation criteria are included as **Appendix A**. Data Validation Worksheets will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Lora Lake 2025 Annual Lakeside Groundwater Confirmation Analysis

SDG	SAMPLE ID	LAB ID	1613B Dioxins
2510232	MW-CP4-041625	2510232-01	✓

DATA VALIDATION REPORT
Lora Lake - Annual Lakeside GW Monitoring 2025
Dioxin/Furan Compounds by Method 1613B

This report documents the review of analytical data from the analysis of one groundwater sample and the associated field quality control (QC) samples. Samples were analyzed by Enthalpy Analytical, El Dorado Hills, California. Refer to the **SAMPLE INDEX** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
25I0232	1 Groundwater	EPA Stage 4

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes, and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

Sample results and related quality control data were received as an electronic data deliverable (EDD) and laboratory report. The EDD was verified against the laboratory report (10%). No discrepancies were noted.

TECHNICAL DATA VALIDATION

The quality control (QC) requirements reviewed are summarized in the following table:

✓	Sample Receipt, Preservation, and Holding Times	✓	Ongoing Precision and Recovery (OPR)
✓	System Performance and Resolution Checks	1	Field Duplicates
✓	Initial Calibration (ICAL)	✓	Target Analyte List
✓	Calibration Verification	✓	Reported Results
1	Blanks (Laboratory and Field)	1	Compound Identification
✓	Labeled Compounds	1	Calculation Verification

✓ *Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.*

1 *Quality control results are discussed below, but no data were qualified.*

2 *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Blanks

No field blanks were submitted.

Field Duplicates

No field duplicates were submitted.

Compound Identification

When a DB5 column is used, the method requires the confirmation of 2,3,7,8-TCDF using an alternate GC column as the DB5 column cannot fully separate 2,3,7,8-TCDF from closely eluting non-target TCDF isomers. The laboratory uses ZB-DIOXIN column which provides adequate resolution of the TCDF isomers as indicated by the acceptable peak to valley ratios. Since the 2,3,7,8-TCDF resolution was acceptable, no confirmation was necessary.

The laboratory assigned an "EMPC" flag to indicate that the ion ratio criterion for positive identification was not met. Since the ion abundance ratio is the primary identification criterion for high resolution mass spectroscopy, an outlier indicates that the reported result may be a false positive. These "EMPC" flagged results were reported as not detected by the laboratory. This is consistent with historical treatment of EMPCs for this project.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the labeled compound and on-going precision and recovery (OPR) recoveries, and precision was acceptable as demonstrated by the acceptable OPR recoveries from batch to batch.

No data were qualified for any reason. All data, as reported, are acceptable for use.



APPENDIX A

DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES **Based on National Functional Guidelines**

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.
-----	---

DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r ²)
	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L) ¹ where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L) ¹ where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L) ¹ for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L) ¹ where appropriate
	9A	Precision (Lab QC replicates: LCS/LCSD, MS/MSD, Lab Replicate)
	9B	Precision (Field QC replicates)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L) ¹ where appropriate
	12	Reference Material Use bias flags (H,L) ¹ where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L) ¹ where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L) ¹ where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2 nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
	27	Alkylated PAH compound not calibrated (C1-C4 homologs) - calculated using response from parent compounds
	28	Multiple PCB Aroclors reported in sample (overlapping patterns)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)

¹H = high bias indicated

L = low bias indicated

EcoChem, Inc.

Dioxin/Furan Analysis by HRMS
(Based on NFG 2016 & NFG 2020¹ and Methods EPA 1613B² and SW-846 8290A³)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling				
Cooler/Storage Temperature Preservation	Cooler temps: All 0-6°C Store at laboratory: Waters/Seds/Soils ≤ 6°C & in the dark Tissues < -10°C & in the dark Store extracts at < -10°C in the dark Preservation Aqueous: If residual Cl ₂ is present, 80 mg Thiosulfate per L must be added. If pH is not 7 - 9, it must be adjusted to 7 - 9	If not properly stored or preserved: J(pos)/UJ(ND) if thiosulfate not added if Cl ₂ present; J(pos)/UJ(ND) if pH not adjusted J(pos)/UJ(ND) if cooler temp > 20°C (EcoChem PJ) J(pos)/UJ(ND) if not stored at required temp at laboratory	1	EcoChem PJ, see TM-05 Other guidance (DMMP, QAPP) may require samples to be frozen at -20°C
Holding Time	If properly stored, Extraction (all matrices): 1 year from collection Analysis (all matrices): 1 year from extraction	If HT exceeded: J(pos)/UJ(ND); (or R for non-detects for gross exceedance - PJ)	1	EcoChem PJ, see TM-05 Gross exceedance = > 1 year 2020 NFG Other programs or project guidance documents may have overriding holding time requirements (e.g. SW8290 is 30 days/90 days)
Instrument Performance				
Mass Resolution (PFK)(Tuning) (Static Resolving Power Check)	PFK (Perfluorokerosene) Analyzed prior to ICAL and at the beg/end of each 12 hr. shift. ≥10,000 resolving power at low and high mass in each descriptor group (Table 6 8290 or Table 8 1613 for low and high masses for each descriptor) Lock-mass: for each descriptor, exact m/z within 5 ppm of theoretical m/z (Table 8 of Method 1613B) (e.g. 380.9760 ± 0.0019 amu or 319.8645±0.0016).	J(pos)/No qualifier(ND) all analytes in all samples associated with the tune if < 10,000 PJ if exact mass not within 5 ppm of theoretical mass	24	Notify PM if tune not performed See Figure 2 from Method 8290A for peak profile showing correct zeroing of detector acceptable tune is demonstrated when peak profile w/in 200 ppm window at 5% peak height Note: Laboratory can choose to monitor masses other than those in method tables
Windows Defining Mix (WDM)	Should contain first and last eluting isomers in each homologueous series. Analyze after PFK, before ICAL, and at beginning of each 12 hour period. Peaks for first and last eluters must be within established retention time windows for each selector group (chlorination level)	If not performed at required frequency but calibration OK, qualify only homologue totals: J(pos)/UJ(ND) If peaks are not completely within windows (clipped) then: - If 2,3,7,8 substituted are ok, J(pos)/UJ(ND) homologues (Totals) - If 2,3,7,8 substituted are also affected, J result for native compounds in addition to homologues	24	Notify PM if not performed at required frequency or if major issues affection detection of 2,3,7,8 isomers Objective is to establish retention time windows for each homologue group switching times between homologue groups NFG: WDM and ISC can be combined into one mixture (Column Performance Solution or CPS)
Isomer Specificity Check (ISC)	Must be analyzed before ICAL and CCAL Evaluate using measurements on SICPs Valley ≤ 25% (valley = (x/y)*100%) ⁶ Resolution must be demonstrated for closest eluting peaks to 2378-TCDD or 2378-TCDF	If resolution criteria not met but calibration is OK, J (pos) tetra - hexa and HpCDF congeners (no action for ND) If resolution criteria not met and calibration standards indicate problem in resolving 2,3,7,8-substituted analytes, J(pos)/No action (ND)	24	EcoChem PJ, see TM-05, Rev. 2; NFG has specific criteria for DB-5 and DB-225 columns; however most labs are using an alternate column to DB-5 with adequate resolution. NFG: WDM and ISC can be combined into one mixture (Column Performance Solution or CPS)
Initial Calibration Sensitivity	S/N ratio > 10 for all native and labeled compounds Minimum levels in Method 1613B, Table 2 must be met.	PJ - will depend on severity, J(pos)/UJ(ND) Method requires instrument adjustment and re-analysis	5A	Discuss with PM NFG PJ: if only lowest standard impacted, drop standard and raise the RL
Initial Calibration Selectivity	Ion Abundance Ratio Method 1613B: Table 9 (QC limits) Method 8290A: Table 8	PJ - will depend on severity, J(pos)/No action (ND)	5A	EcoChem PJ, see TM-05, Rev. 2 Discuss with PM

Dioxin/Furan Analysis by HRMS
 (Based on NFG 2016 & NFG 2020¹ and Methods EPA 1613B² and SW-846 8290A³)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Performance (continued)				
Initial Calibration (Minimum 5 stds.) Stability	Method 1613B: %RSD < 20% for native compounds %RSD < 35% for labeled compounds Method 8290A: %RSD < 20% for native compounds %RSD < 30% for labeled compounds	J(pos)/UJ(ND) natives if %RSD > 20% for native No action for labeled	5A	Notify PM Method requires new ICAL EcoChem PJ, see TM-05, Rev. 2
	Lock Mass in Method 1613B Table 8 shall not vary by more than ±20% (> 20% indicates presence of coeluting interferences.)	Notify PM Method requires new ICAL		
	RT for native and labeled is within RTW (Method 1613B, Table 2) and RT between ICAL Stds are consistent. Absolute RT of ¹³ C ₁₂ -1234-TCDD >25 min on DB-5 & >15 min on DB-225	Narrate, no action R(pos)/R(ND) for large shifts		
Continuing Calibration (Prior to each 12 hr. shift) Sensitivity	S/N ratio for CCAL standard > 10	If <10, elevate Det. Limit or R(ND)	5B	
Continuing Calibration (Prior to each 12 hr. shift) Selectivity	Ion Abundance Ratio Method 1613B: Table 8 (required m/z to monitor) Table 9 (QC limits) Method 8290A: Table 8	J(pos) natives in all samples associated with CCAL. No action for labeled congener ion ratio outliers.	25	EcoChem PJ, see TM-05, Rev. 2 Project may have different qualifiers (e.g. UJ < RL)
Continuing Calibration (Prior to each 12 hr. shift) Stability	Beginning of every 12-hour shift (beginning and end for Method 8290A) %D +/-20% for native compounds %D +/-30% for labeled compounds (Must meet limits in Table 6, Method 1613B) If %D in the closing CCAL are within 25%/35%, the mean RF from the two CCAL may be used to calculate samples (Section 8.3.2.4 of 8290)	Labeled compounds: Narrate, no action. Native compounds: 1613: J(pos)/UJ(ND) if %D is outside Table 6 limits J(pos)/R(ND) if %D is +/-75% of Table 6 limits 8290: J(pos)/UJ(ND) if %D = 20% - 75% J(pos)/R(ND) if %D > 75%	5B (H,L)⁴	
	Absolute RT of ¹³ C ₁₂ -1234-TCDD and ¹³ C ₁₂ -123789-HxCDD should be +/- 15 seconds of ICAL RRT for all other compounds must meet criteria listed in Table 2 Method 1613.	Narrate, no action	5B	EcoChem PJ, see TM-05, Rev. 2 If RRT not summarized, spot check chromatograms: native vs labelled. Spot-calculate if RT are not close (RT native in minutes/RT labeled in minutes)
Blank Contamination				
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected compounds > RL	If sample result < RL U(pos) if sample result is < 5x blank conc If sample result > RL U(pos) if result is < 2x blank conc J(pos) if result is > 2x blank conc but ≤ 5x blank conc	7 or 7H	Use either U-7 or J-7H / U-6 or J-6H Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review FB , qualify as needed
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > RL	EMPC values in blank treated as positive result unless project criteria overrides (see comments section)	6 or 6H	Project criteria for EMPC may override this criteria. For example, if project criteria requires U-25 for EMPC < RL, then treat EMPC < RL in blank as non-detect

Dioxin/Furan Analysis by HRMS
 (Based on NFG 2016 & NFG 2020¹ and Methods EPA 1613B² and SW-846 8290A³)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
On-going Precision and Recovery Standard (OPR) (aka blank spike or LCS)	One per lab batch (of ≤ 20 samples) Use most current laboratory control limits or Limits from Table 6 of 1613B	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if %R < 10% - very low bias PJ if not prepared with samples	10 (H,L) ⁴	Qualify all associated samples. Qualifiers assigned if only one of the OPR or OPR Dup %R values is outside of control limits
OPR/OPR Dup (BS/BSD or LCS/LCSD) (RPD)	OPR Dup not typically required for HRMS analyses (OPR demonstrates on-going laboratory precision from batch to batch; OPR Dup demonstrates precision within the batch) One set per matrix and batch of 20 samples RPD < 35%	J(pos) assoc. compound in all samples if RPD > CL	9A	Qualify all associated samples.
MS/MSD (recovery)	MS/MSD not typically required for HRMS analyses. If lab analyzes MS/MSD then one set per matrix per batch (of ≤ 20 samples) Use most current laboratory control limits	J(pos) if both %R > UCL - high bias J(pos)/UJ(ND) if both %R < LCL - low bias J(pos)/R(ND) if both %R < 10% - very low bias J(pos)/UJ(ND) if one > UCL & one < LCL, with no bias PJ if only one %R outlier	8 (H,L) ⁴	No action if only one spike %R is outside criteria. No action if parent concentration is > 4x the amount spiked. Qualify parent sample only unless other QC indicates systematic problems.
MS/MSD (RPD)	MS/MSD not typically required for HRMS analyses. If lab analyzes MS/MSD then one set per matrix per batch (of ≤ 20 samples) Use most current laboratory control limits	J(pos) in parent sample if RPD > CL	9A	Qualify parent sample only. Evaluate all results, even if spike concentration < 4x parent
Lab Duplicate (RPD)	Lab Dup not typically required for HRMS analyses (OPR demonstrates on-going laboratory precision) One per lab batch (of ≤ 20 samples) Use most current laboratory control limits	J(pos)/UJ(ND) if RPD > CL	9A	Qualify parent sample
Labeled Compounds (Internal Standards and cleanup standards)	Added to all samples %R = 40% - 135% in all samples 8290 %R must meet limits in Table 7 Method 1613B	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if %R < 10% - very low bias R(pos)/R(ND) if not added	13 (H,L) ⁴	
	Ion Abundance Ratio Method 1613B: Table 9 (QC limits) Method 8290A: Table 8	PJ - will depend on severity, J(pos)/No action (ND)	13	
Field Duplicates	Solids: RPD <50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR difference < 1X RL (for results < 5X RL)	Narrate and qualify if required by project J(pos)/UJ (ND) - qualify parent and duplicate only Evaluate precision for Total Homologues (TEQ, if reported, are not evaluated or qualified)	9B	See TM24 for additional guidance Project control limits may override EcoChem PJ limits

Dioxin/Furan Analysis by HRMS
(Based on NFG 2016 & NFG 2020¹ and Methods EPA 1613B² and SW-846 8290A³)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Quantitation/Identification				
Signal/Noise	All ions for each isomer must maximize within +/- 2 seconds. S/N ratio >2.5 (labeled/internal stds >10)	Narrate in report; qualify if necessary J(pos) for ion ratio outliers.	25	EcoChem PJ, see TM-05, Rev. 2 Stage 4 Data package should have SICP ⁵ for two target analyte channels, labeled standards, diphenyl ether trace, and lock-mass trace.
Retention Times	RRTs w/in limits in Table 2 of 1613B Quantitation ions maximize within the same 2 seconds	If RRT outside of limits: NJ(pos) or U(pos) at reported concentration if it is determined that the peak has been misidentified. If Quantitation ions don't maximize in the same 2 seconds: NJ(pos) or U(pos) at reported concentration	24	
EMPC (estimated maximum possible concentration)	Ion ratios must meet criteria listed in Table 8 Method 8290, or Table 9 of 1613B If quantitation identification criteria (ion abundance ratio) are not met, laboratory should report an EMPC value.	If laboratory reports EMPCs as detects, qualify the native compound and total homologue groups as J(pos) If laboratory reports EMPC as ND, notify PM to make sure that this is appropriate for the project.	25	See TM-18 Default decision is to treat EMPCs as detects. Some projects/programs treat EMPCs as non-detects. Some labs report 2 results for total homologues: one with EMPC as a detect and one with EMPC set to zero. Qualifiers for totals may be project dependent.
Interferences	Interferences from chlorodiphenyl ether compounds	Stage 4 DV: If raw abundance > 10% of target compound raw abundance UJ(pos) If raw abundance ≤ 10% of target compound raw abundance J(pos) Stage 2A, 2B DV: J(pos)	23H ⁴	See TM-16
		If laboratory did not monitor PCDPE interference ions, J(pos)/UJ(ND) all target and total furan results and discuss non-conformance in report.	14	
	Lock masses baseline must not deviate +/- 20% Exact m/z within 5 ppm of theoretical m/z from values in Table 8 of 1613B	For associated analytes (deflection at same RT as target analyte) J(pos) if present; Reject (R) if deflection > 50%	14L ⁴ 14	See TM-17 No bias for rejected data
Second Column Confirmation	If laboratory uses DB-5 column, all 2,3,7,8-TCDF hits must be confirmed on a DB-225 (or equiv) column. All QC criteria must also be met for the confirmation analysis.	Report the DB-225 value. DNR the DB-5 value If not performed use PJ.	11	EcoChem PJ, see TM-05, Rev. 2 Some labs only confirm 2,3,7,8-TCDF if the DB-5 result is >RL. This is OK as results < RL are already J-flagged. Some labs use columns that resolve peaks - no confirmation needed
Calculation Check	Check 10% of field & QC sample results	Contact laboratory for resolution and/or corrective action	na	Full data validation only. Focus on congeners with higher toxic equivalency factors (TEF): these are the Tetras and Pentas. Also recalculate one EMPC (if reported) and one EDL
Electronic Data Deliverable (EDD)				
Verification of EDD to hardcopy data	Verify at 10% unless problems noted; then increase level up to 100% for next several packages.	Depending on scope of problem, correct at EcoChem with PM approval (minor issues) or resubmittal by laboratory (major issues).	na	EcoChem Project Manager and/or Database Administrator will work with lab to provide long-term corrective action.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	Use "DNR" to flag results that will not be reported.	11 (or reason code for QC outlier)	

descriptor group and function group may be used interchangeably

¹ National Functional Guidelines for High Resolution Superfund Methods Data Review, April 2016 & November 2020

² EPA Method 1613, Rev.B, Tetra-through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGS/HRMS, October 1994

³ Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS), USEPA SW-846, Method 8290A, February 2007

⁴ NFG 2020 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

⁵ SICPs = Selected Ion Current Profiles

⁶ x = height from valley of least resolved adjacent isomer to baseline; y = peak height of the shorter for the adjacent peaks

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Appendix C
Soil Cap and Wildlife Barrier
Inspection Logs and Photographs

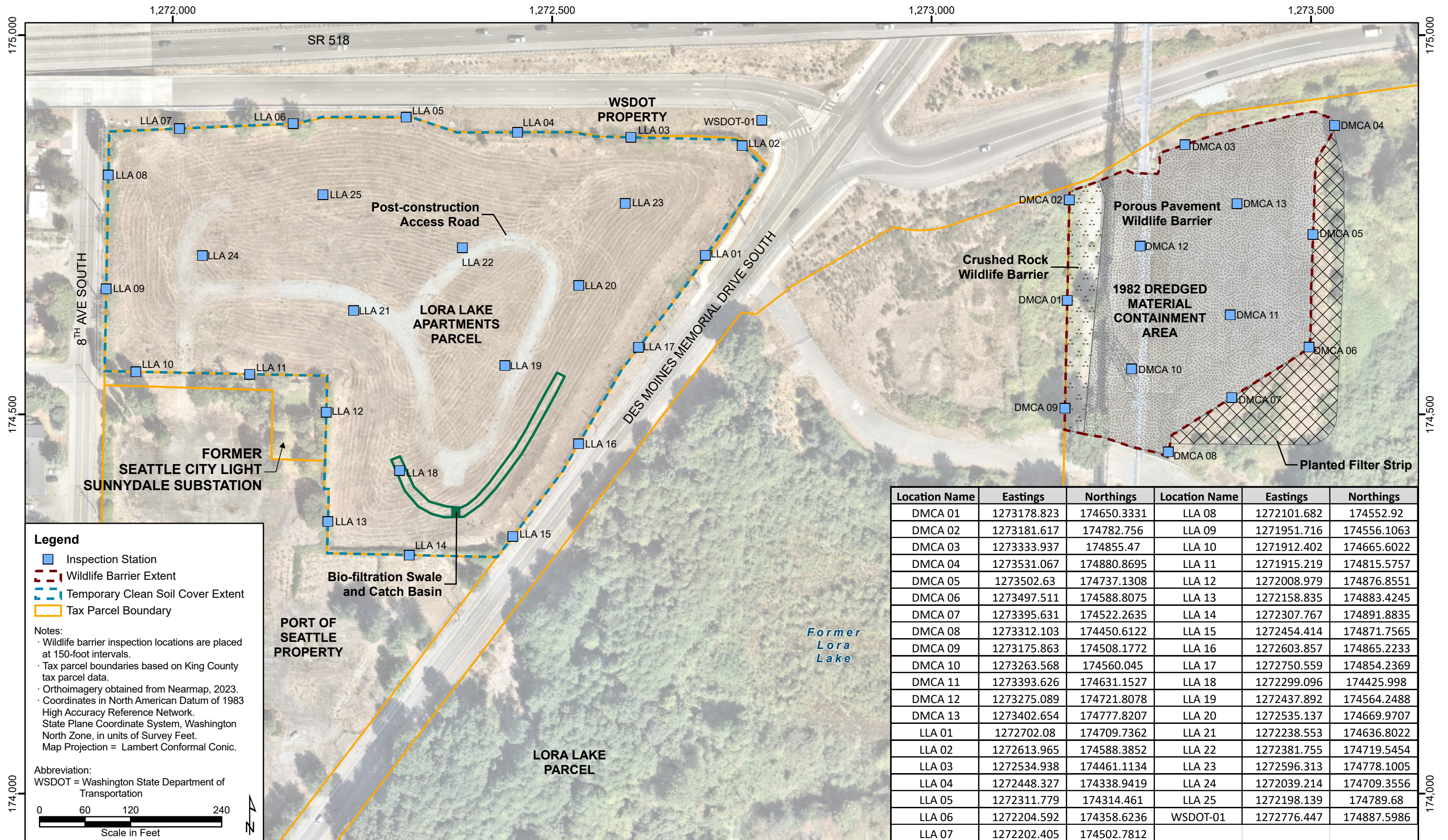
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Inspection Logs and Photographs

Figure



Legend

- Inspection Station
- Wildlife Barrier Extent
- Temporary Clean Soil Cover Extent
- Tax Parcel Boundary

Notes:

- Wildlife barrier inspection locations are placed at 150-foot intervals.
- Tax parcel boundaries based on King County tax parcel data.
- Orthoimagery obtained from Nearmap, 2023.
- Coordinates in North American Datum of 1983 High Accuracy Reference Network, State Plane Coordinate System, Washington North Zone, in units of Survey Feet. Map Projection = Lambert Conformal Conic.

Abbreviation:
WSDOT = Washington State Department of Transportation

0 60 120 240
Scale in Feet

Location Name	Eastings	Northings	Location Name	Eastings	Northings
DMCA 01	1273178.823	174650.3331	LLA 08	1272101.682	174552.92
DMCA 02	1273181.617	174782.756	LLA 09	1271951.716	174556.1063
DMCA 03	1273333.937	174855.47	LLA 10	1271912.402	174665.6022
DMCA 04	1273531.067	174880.8695	LLA 11	1271915.219	174815.5757
DMCA 05	1273502.63	174737.1308	LLA 12	1272008.979	174876.8551
DMCA 06	1273497.511	174588.8075	LLA 13	1272158.835	174883.4245
DMCA 07	1273395.631	174522.2635	LLA 14	1272307.767	174891.8835
DMCA 08	1273312.103	174450.6122	LLA 15	1272454.414	174871.7565
DMCA 09	1273175.863	174508.1772	LLA 16	1272603.857	174865.2233
DMCA 10	1273263.568	174560.045	LLA 17	1272750.559	174854.2369
DMCA 11	1273393.626	174631.1527	LLA 18	1272299.096	174425.998
DMCA 12	1273275.089	174721.8078	LLA 19	1272437.892	174564.2488
DMCA 13	1273402.654	174777.8207	LLA 20	1272535.137	174669.9707
LLA 01	1272702.08	174709.7362	LLA 21	1272238.553	174636.8022
LLA 02	1272613.965	174588.3852	LLA 22	1272381.755	174719.5454
LLA 03	1272534.938	174461.1134	LLA 23	1272596.313	174778.1005
LLA 04	1272448.327	174338.9419	LLA 24	1272039.214	174709.3556
LLA 05	1272311.779	174314.461	LLA 25	1272198.139	174789.68
LLA 06	1272204.592	174358.6236	WSDOT-01	1272776.447	174887.5986
LLA 07	1272202.405	174502.7812			

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Attachment C.1
Lora Lake Apartments Parcel
Inspection Log and Photographs

Lora Lake Apartments Temporary Cap Inspection Form															
Monitoring Station	Photo Number	Check All That Apply						Overall Condition of Barrier			Repair Needed		Comments/Observations		
		Engineered surface characteristics condition compromised	Exposed underlying soil	Loss of barrier material	Down-slope movement of barrier material	Presence of debris on barrier surface	Substantial plant growth	Good	Fair	Poor	Yes	No			
LLA 01	L1		X						X				X		
LLA 02	L2		X						X				X		
LLA 03	L3						X	X					X	Substantial scotsbroom and himalayan blackberry growth.	
LLA 04	L4						X	X					X		
LLA 05	L5			X			X		X				X		
LLA 06	L6							X					X		
LLA 07	L7							X					X		
LLA 08	L8						X	X					X		
LLA 09	L9						X	X					X		
LLA 10	L10							X					X		
LLA 11	L11							X					X	Some loss of barrier material (plant coverage) similar to 2024. Appears to be related to maintenance and maintenance vehicles or minor erosion. Should resolve with regular maintenance/planting.	
LLA 12	L12		X		X				X		X				
LLA 13	L13		X		X				X		X				
LLA 14	L14		X					X					X		
LLA 15	L15		X		X				X				X		
LLA 16	L16							X					X		
LLA 17	L17		X		X				X				X		
LLA 18	L18		X	X						X	X			Loss of barrier material and exposed underlying soil likely due to bird scavenging. Large portions of dead grass at all locations marked fair or poor.	
LLA 19	L19		X	X						X	X				
LLA 20	L20							X					X		
LLA 21	L21		X						X		X				
LLA 22	L22		X	X						X	X				
LLA 23	L23							X					X		
LLA 24	L24							X					X		
LLA 25	L25		X							X	X				
LLA 26	L26							X					X		
LLA 27	L27							X					X		
WSDOT 01								X					X		



Photograph L1. Station LLA 01 in fair condition with some exposed underlying soil.



Photograph L2. Station LLA 02 in fair condition with some exposed underlying soil.



Photograph L3. Station LLA 03 in good condition.



Photograph L4. Station LLA 04 in good condition.



Photograph L5. Station LLA 05. Loss of barrier material and substantial plant growth.



Photograph L6. Station LLA 06 in good condition.



Photograph L7. Station LLA 07 in good condition.



Photograph L8. Station LLA 08 in good condition.



Photograph L9. Station LLA 09 in good condition.



Photograph L10. Station LLA 10 in good condition.



Photograph L11. Station LLA 11 in good condition.



Photograph L12. Station LLA 12. Exposed underlying soil and down-slope movement of barrier material.



Photograph L13. Station LLA 13. Exposed underlying soil and down-slope movement of barrier material.



Photograph L14. Station LLA 14. Exposed underlying soil.



Photograph L15. Station LLA 15. Exposed underlying soil and down-slope movement of barrier material.



Photograph L16. Station LLA 16 in good condition.



Photograph L17. Station LLA 17. Exposed underlying soil and down-slope movement of barrier material.



Photograph L18. Station LLA 18. Exposed underlying soil and loss of barrier material.



Photograph L19. Station LLA 19. Exposed underlying soil and loss of barrier material.



Photograph L20. Station LLA 20 in good condition.



Photograph L21. Station LLA 21. Exposed underlying soil.



Photograph L22. Station LLA 22. Exposed underlying soil and loss of barrier material.



Photograph L23. Station LLA 23 in good condition.



Photograph L24. Station LLA 24 in good condition.



Photograph L25. Station LLA 25. Exposed underlying soil.

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Attachment C.2
DMCA Inspection Log and Photographs

DMCA Wildlife Barrier Inspection Form														
Monitoring Station	Photo Number	Check All That Apply						Overall Condition of Barrier			Repair Needed		Comments/Observations	
		Engineered surface characteristics condition compromised	Exposed underlying soil	Loss of barrier material	Down-slope movement of barrier material	Presence of debris on barrier surface	Substantial plant growth	Good	Fair	Poor	Yes	No		
DMCA 01	D1					X	X	X				X		
DMCA 02	D2					X	X	X				X		
DMCA 03	D3							X				X		
DMCA 04	D4					X		X				X		Some moss growth near edge of asphalt.
DMCA 05	D5							X				X		Potential material loss area previously noted in 2023 is stable.
DMCA 06	D6							X				X		
DMCA 07	D7							X				X		
DMCA 08	D8							X				X		
DMCA 09	D9					X		X				X		Dust and organic debris associated with large deciduous tree.
DMCA 10	D10							X				X		
DMCA 11	D11							X				X		
DMCA 12	D12							X				X		
DMCA 13	D13							X				X		



Photograph D1. Station DMCA 01 in good condition with some debris on barrier surface.



Photograph D2. Station DMCA 02 in good condition with some debris on barrier surface.



Photograph D3. Station DMCA 03 in good condition.



Photograph D4. Station DMCA 04 in good condition with some moss growth in far-right corner.



Photograph D5. Station DMCA 05 in good condition.



Photograph D6. Station DMCA 06 in good condition.



Photograph D7. Station DMCA 07 in good condition.



Photograph D8. Station DMCA 08 in good condition.



Photograph D9. Station DMCA 09. Presence of debris on barrier surface.



Photograph D10. Station DMCA 10 in good condition.



Photograph D11. Station DMCA 11 in good condition.



Photograph D12. Stations DMCA 12 in good condition.



Photograph D13. Station DMCA 13 in good condition.