



STORM WATER AND GROUND WATER SOURCE CONTROL EVALUATION REPORT (POST SOURCE CONTROL MEASURES PERFORMANCE MONITORING)



Lampros Steel

9040 North Burgard Way
Portland, Oregon 97203

Agency Information

NPDES 1200-Z Permit
ODEQ File No. 125660
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ECSI File No. 2441

Prepared for:

Johnson-Lampros Warehouse LLC

9040 North Burgard Way
Portland, Oregon 97203

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This

Storm Water and Ground Water Source Control Evaluation Report (Post Source Control Measures Performance Monitoring)

For the:

Lampros Steel

9040 North Burgard Way
Portland, Oregon 97203

Has been prepared for the sole benefit and use of our Client:

Johnson-Lampros Warehouse LLC

9040 North Burgard Way
Portland, Oregon 97203

and its assignees

Issued June 12, 2026 by:



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List of Acronyms and Abbreviations

BES	Bureau of Environmental Services
bgs	below ground surface
BMPs	best management practices
btoc	below top of casing
Client	Johnson-Lampros Warehouse LLC
COC	contaminants of concern
COI	contaminants of interest
CRBG	Columbia River Basalt Group
CU1	confining unit 1
CU2	confining unit 2
ECSI	Environmental Cleanup Site Information
ENW	EVREN Northwest, Inc.
EPA	U.S. Environmental Protection Agency
JSCS	Joint Source Control Strategy
LUST	Leaking Underground Storage Tank
µg/L	micrograms per liter
NPDES	National Pollutant Discharge Elimination System
ODEQ	Oregon Department of Environmental Quality
OWRD	Oregon Water Resources Department
PAHs	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl
ROD	Record of Decision
SCE	Source Control Evaluation
SCM	source control measure
SGA	sand and gravel aquifer
SWPCP	Storm-water Pollution Control Plan
TEQ	Toxicity Equivalence Quotients
TGA	Troutdale gravel aquifer
TSA	Troutdale sandstone aquifer
TSS	total suspended solids
UFGS	undifferentiated fine-grained sediments
UST	underground storage tank

1.0 Introduction

At the request of Johnson-Lampros Warehouse, LLC (JLW; Client), EVREN Northwest, Inc. (ENW) has prepared this **Storm-water and Ground-water Source Control Evaluation (Post Source Control Measures Performance Monitoring)** (SCE) report for the property located at 9040 North Burgard Way in Portland, Oregon (project site; see Figures 1 and 2). This source control evaluation (SCE) was requested by the Oregon Department of Environmental Quality (ODEQ) as part of ongoing remedial investigations at the site.

1.1 Purpose

The purpose of the SCE is to confirm the effectiveness of additional implemented source control measures (SCMs) at the site. ENW understands the findings will support decision making by ODEQ in their overall evaluation of site conditions.

1.2 Source Control Objectives

The objective of this SCE is to demonstrate that existing and potential sources of contamination to storm water and ground water at the site have been characterized and appropriately managed and no additional characterization or SCMs are needed at the site. This work is in support of issuance by ODEQ and other governing bodies/agencies of a source control determination and subsequent no further action (NFA) determination.

1.3 Regulatory Framework

The ODEQ has identified the subject site as subject to the Portland Harbor Source Control Program. Therefore, this SCE conforms with the requirements of the Portland Harbor Joint Source Control Strategy (JSCS).

The SCE follows the *Work Plan for Storm Water Source Control Measures and Performance Monitoring*,¹ prepared by ENW in 2021, and the *Work Plan for Monitoring Well Installation and Ground Water Monitoring*,² prepared by ENW in 2025, both of which were approved by ODEQ. The SCE was completed in general accordance with ODEQ guidance³ and relied upon the following references:

- ODEQ's *Guidance for Evaluating the Stormwater Pathway at Upland Sites*, dated January 2009 (updated October 2010, with Rank Order Curves updated in 2024).
- ODEQ/EPA's *Portland Harbor Joint Source Control Strategy (JSCS)*, dated December 2005.
- EPA *Record of Decision, Portland Harbor Superfund Site*, dated January 2017.

The SCE is intended to provide supporting documentation to assist ODEQ in completing an uplands source control decision for the project site to satisfy the JSCS SCE requirements.

¹ ENW, *Work Plan for Post-Storm Water Source Control Measures Performance Monitoring*. Dated May 27, 2021.

² ENW, *Work Plan for Monitoring Well Installation and Ground Water Monitoring*. Dated March 11, 2025.

³ <https://www.oregon.gov/deq/Hazards-and-Cleanup/env-cleanup/Pages/Stormwater-Guidance.aspx>

1.4 Report Organization

This report is organized to be generally consistent with ODEQ's *Template for a Stormwater Source Control Evaluation Report*.⁴ Specifically, this report includes: an introduction, a discussion of the site background, an examination of potential sources and contaminants of interest, an evaluation of discharge pathways, presentation of ongoing storm-water management measures, the results of the source control evaluation, and findings and conclusions.

2.0 Site Background

2.1 Site Description

The subject site is a 25.2-acre parcel of industrial property located in an industrial area of North Portland, Oregon. The site lies 2,800 feet east of the Willamette River and approximately 2.7 miles upstream (south) of its confluence with the Columbia River. The site is bordered to the north by N Burgard Way, to the south by N Sever Road, to the west by industrial properties, and to the east by N Time Oil Road and N Lombard Street. Both the Site and the surrounding properties are zoned Heavy Industrial (IH) by the City of Portland. The subject site is shown relative to surrounding physical features on Figure 1. The subject site layout and adjacent properties are shown on Figure 2. The stormwater system at the site is shown on Figure 3.

2.2 Site Ownership and Operating History

The subject site consisted of vacant marshland until the late 1940's when it was filled and developed with a structure in the southeast corner of the site. Based on information reported by others,⁵ the building was used as storage for World War II military operations at the nearby Port of Portland Terminal. After World War II, the site was used as storage space by several industrial tenants and as part of a larger industrial park. By the early 1960s, the previously existing structure on site had been removed. The building currently on site was constructed in the early 1980s and has been consistently used as a warehouse along with outdoor open-air storage.

The site has been operated by Lampros Steel since 2004 for specialty structural steel warehousing on approximately 13.5-acres of the approximately 25-acre property (Figure 2). Site operations include loading, unloading, and storage of steel products; no steel manufacturing takes place at the site. Manufactured steel products are transported to and from the site using either semi-trailers or rail (two rail spurs are present on the southwest portion of the site). Onsite loading and unloading of manufactured steel are completed by hydraulic forklift. Other supplemental industrial activities include some value-added processing (steel sawing and cambering services), and equipment maintenance and fueling (described below). A covered fuel station, designed to minimize exposure to storm water, is present in the central eastern area of the site. Exterior areas are mostly used for storage of structural steel products.

⁴ <https://www.oregon.gov/deq/FilterDocs/cu-stormwaterSitesAppC.pdf>

⁵ Adapt Engineering, Inc., September 20, 2010. *Phase I Environmental Site Assessment: Lampros Steel – 9040 North Burgard Way*

A 6-acre portion of the site is operated by Shippers Transport Express for storage of trailers and some routine trailer maintenance including minor brakes repair, wheel/tire assembly replacement, electrical service, air pressure testing, lockdown and landing gear service (see Figure 2).

The current site owner, JLW, has owned the site since August 2019.

2.3 Topography

The subject site is located within the US Geological Survey Linnton, Oregon 7.5-minute quadrangle, at an approximate elevation of 31 feet above mean sea level (see Figure 1). The subject property is generally level and the surrounding area slopes gently to the northwest and northeast. The site lies slightly lower than industrial properties to the north, south and west, and significantly lower than roadways to the east.

2.4 Hydrogeology

The site is in the Peninsula area bounded by the Columbia River to the north, Willamette River to the west, and the Columbia Slough to the east in the west portion of the Portland Basin. The Portland Basin is part of the Puget-Willamette Lowland, a topographic and structural trough that separates the Coast Range to the west and the Cascade Mountains to the east.

Eight major hydrostratigraphic units are mapped⁶ in the Portland Basin aquifer system, including from oldest to youngest: older rocks, sand and gravel aquifer (SGA), confining unit 2 (CU2), Troutdale sandstone aquifer (TSA), confining unit 1 (CU1), consolidated gravel aquifer aka Troutdale gravel aquifer (TGA), and unconsolidated sedimentary aquifer (USA). An undifferentiated fine-grained sedimentary unit with confining characteristics similar to CU1 and CU2 forms the eighth unit.

These hydrostratigraphic units have been grouped into three subsystems, older rocks, lower sedimentary, and upper sedimentary⁶ as discussed in the following sections.

2.4.1 Older Rocks

Older rocks are comprised of marine and older volcanic rocks underlying the basin-filling sediments in the Portland Basin, which are estimated to occur 400- to 600-ft below mean sea level in the site area. Except for the Columbia River Basalt Group (CRBG), older rocks are of generally low permeability and do not provide enough capacity for use other than domestic use. Based on ENW's search of well logs in Oregon Water Resources Department (OWRD) database (Appendix B), no apparent wells screened in CRBG interflow aquifers were identified within approximately 1-mile radius of the subject site.

2.4.2 Lower Sedimentary Subsystem

While the SGA, CU2, TSA, and CU1 are mapped beneath portions of the Columbia South Shore Wellfield in the eastern part of the Portland Basin, they are not thought to occur, or are not distinguishable as such, beneath the Peninsula area. Rather, sediments equivalent in lithology to the CU1 and CU2 are mapped⁶ in the Peninsula area as undifferentiated fine-grained sediments (UFGS) directly overlying the older rocks and underlying the TGA. They are broadly mapped as being 200- to 400-ft-thick in the Peninsula area and

⁶ Swanson, R.D., and others, 1993. *A description of hydrogeologic units in the Portland Basin, Oregon and Washington*: U.S. Geological Survey Water-Resources Investigations Report 90-4196, 56p., 10 sheets, Map Scale 1:100,000.

based on ENW's search of well logs (Appendix B), the top of the UFGS is estimated to occur between approximately 230-ft as shown in Multnomah County well report MULT 1824 and 270-ft in MULT 658. MULT 1824 is screened in the TGA above these fine-grained sediments.

2.4.3 Upper Sedimentary Subsystem

The Upper Sedimentary Subsystem and underlying TGA comprise the hydrostratigraphic units of the upper sedimentary subsystem in the Peninsula area.

- **Upper Sedimentary Subsystem.** The Upper Sedimentary Subsystem contains Holocene Columbia River alluvium in the Peninsula area and a mantle of Pleistocene catastrophic flood deposits in the central part of the basin, ranges up to 200 feet thick (MULT 139148) and averages approximately 140-ft-thick in the Peninsula area. In well logs this unit is described as brown, gray, or blue clay, silty clay, sandy clay, silty sand, sand and silty gravel with occasional cobbles. The Upper Sedimentary Subsystem generally yields small but adequate quantities of water for domestic supplies. First-encountered groundwater was encountered at 120-ft below top of casing (btoc) in MULT 90363, though rose to a static water level (SWL) of 21-ft, suggesting confining groundwater conditions in the deeper part of this unit.

In the three 15-ft monitoring wells at the site, saturated unconsolidated medium-grained sand was encountered between 5- and 9-ft below ground surface (bgs), and static water levels ranged from 4.92 (MW01) to 8.38 (MW03) feet btoc. Seasonally, SWLs in the three monitoring wells at the site ranged from 4.36 (MW01) to 7.99 (MW03) feet btoc during the wet season in March 2025, and 6.65 (MW01) to 9.61 feet btoc at the end of the dry season in September 2025.⁷

While some of the most productive wells in the Portland Basin are completed in the Upper Sedimentary Subsystem,⁶ most water wells in the Peninsula area appear to target more productive water-bearing zones in the TGA according to well reports.

- **TGA.** Cemented conglomerate composed of pebble, gravel and cobble with some boulder-size basalt (CRBG) and quartzite clasts in a micaceous arkosic sand matrix comprises the ancestral Columbia River-derived TGA in the Peninsula area. The ancestral Columbia River-derived TGA is distinguished from the Cascade Range-derived volcanic conglomerate and sandstone TGA in the southern and eastern parts of the Portland Basin.

In the Peninsula area, the TGA is encountered in well borings at depths ranging from 87-ft (MULT 51321) to 195-ft (MULT 139148), with an average of 144-ft, and is up to 213-ft-thick (MULT 658). It is described as soft to hard, loose to hard cemented, brown, gray-brown, gray, blue, and black fine to coarse sand and gravel, cobbles, and boulders with occasional wood.

The TGA is an important and productive source of groundwater in the Portland Basin. Many municipal, industrial, domestic, and irrigation wells in the basin are completed in this aquifer, with yields ranging from a minimum of 50 gallons per minute (gpm) to more than 1,000 gpm. First-encountered groundwater was at 198-ft btoc in MULT 1824, though rose to a static water level of 16-ft. Similarly, first-encountered groundwater was at 195-ft in MULT 3429, though rose to a static water level of 20-ft, suggesting confining groundwater conditions in the TGA.

⁷ ENW, January 12, 2026. *Fourth Quarter 2025 Ground Water Monitoring Report*. Lampros Steel Property.

2.4.4 Fill

Fill soil was encountered in monitoring well borings at the site up to from depths estimated between 6- and 12 feet (Figure 2, monitoring well boring logs in Appendix A). Wood debris was encountered at 7- and 12-ft bgs in MW01, gravel at 5-ft bgs in MW02, concrete debris at 6-ft bgs in MW03, gravel at 6-ft bgs in B-2, gravel at 5-ft bgs in B-3, and concrete at 6-ft bgs in B-9 suggesting the depth of fill in these areas. Review of prior Cascadia Associates, LLC boring logs (Appendix A) suggest up to six feet of fill was encountered in. Fill is mostly gray-brown, orange-brown, and gray unconsolidated medium sand, with lesser layers/lenses of sand with silt, silt with fine sand, fine gravel, and coarse sub-rounded gravel.

The history of fill placement at the site is not precisely known, though occurred sometime between 1940 when a wetland was still shown in an aerial photograph of the site area and 1948 when an aerial photograph shows the site filled and leveled, and a small structure was built on the southeast corner of the site. Select historical aerial photographs are provided in Appendix C. Although there is no available record of the source of fill, site fill likely consists of sand dredge fill from the nearby rivers.

The 1897 Oregon–Washington, Portland Quadrangle topographic sheet and the 1915 Portland topographic map show the northern and central portions of the site as wetland, bordered on the south by Gatton Creek. Historically, Gatton Creek included a southwest-flowing tributary/channel that drained the south end of Ramsey Lake to the north and a southeast-flowing tributary/channel that drained an unnamed lake to the west. Select historical topographic maps are provided in Appendix D. The relative positions of Gatton Creek and these historical tributaries/channels are shown in Figure 2.

2.4.5 Shallow Groundwater Flow and Gradient

Groundwater on site is less than 10 feet below ground surface based on previous environmental investigations on site and has been observed as shallow as 4.36 feet below ground surface during groundwater monitoring. A summary of the depth to water measurements is included as Table 1.

Potentiometric surface plots (Figures 4A through 4D), derived from ground-water elevation data collected across four quarterly monitoring events conducted in 2025, generally indicate a southeastern flow direction, with a slight shift southwest during June 2025. Subtle shifts in flow direction at the site may be attributable to seasonal fluctuations in surface and groundwater and/or tidal effects.

Hydraulic gradient calculations derived from the potentiometric surface plots indicate a relatively low gradient across the site, ranging from approximately 0.0005 vertical feet per lateral foot (ft/ft) during the third quarter of 2025 to 0.001 ft/ft during the fourth quarter of 2025. Given the site's proximity to the Willamette River and Columbia Slough, the shallow groundwater aquifer is likely hydraulically connected to adjacent surface water in the area, resulting in an apparent southeast-southwest ground-water flow patterns in response to fluctuations in surface water stage.

Based on the results from the quarterly monitoring events in 2025, the direction of ground-water flow at the subject area is generally to the southeast to southwest and may be subject to flow reversals in response to tidal fluctuations. Ground-water potentiometric surface plots showing the inferred ground-water flow direction based on ground-water elevation data collected at each of the site monitoring wells during each quarter of 2025 are included as Figures 4A through 4D. The potentiometric surface plots generally indicate a southeastern flow direction. The groundwater elevation data collected during the June 2025 sampling event indicate groundwater flow to the southwest during part of the year. Due to the

proximity to the Willamette River and Columbia Slough, the shallow groundwater aquifer at the site is likely hydraulically connected to surface water in the area.

Additionally, a review of a public land survey map of the Portland area from the 1800s shows the property was once part of a greater slough and lake system, with a slough offshoot (Gatton Creek) running through the southern and western portions of the site. This suggests the ground-water flow direction could be influenced and complicated by the previous slough tributaries/channels, which have subsequently filled at the site (Section 2.4.4).

2.5 Environmental Regulatory Review

2010. The site is listed on ODEQ's Leaking Underground Storage Tank (LUST) database (LUST File No. 26-10-0019). ODEQ has issued a No Further Action (NFA) for the petroleum release discovered in 2010. It should be noted that although this LUST listing is associated with the address 12005 N Burgard Way, it relates to a former fuel island on the subject site that the offsite property owner at 12005 N Burgard Way operated.

2011. Lampros Steel entered into a Voluntary Agreement with ODEQ in May 2011 to conduct a SCE of the storm-water pathway at its property.⁸ ODEQ has assigned the subject site Environmental Cleanup Site Information (ECSI) Site #2441.

Additional details of the environmental history of the site are summarized in the following documents:

- *Phase I Environmental Site Assessment*, prepared by Adapt Engineering for Lampros Steel, September 20, 2010.
- *Soil Matrix Closure Report (LUST File No. 26-10-0019)*, prepared by Construction and Environmental Services for Schnitzer Investment Corporation, January 2010.
- *Phase II Environmental Site Assessment*, prepared by Cascadia Associated, Inc., for Lampros Steel, April 25, 2019.
- *Shallow Soil Investigation*, prepared by ENW for Johnson-Lampros Warehouse, LLC, November 2020.

2.6 Previous Investigations

2.6.1 Previous Source Control Evaluation

Since entering into the Voluntary Cleanup Program in 2011, Lampros Steel has:

- Completed several investigations of contaminants of interest (COIs) in storm-water runoff and storm drain solids on the Lampros property.
- Implemented a series of responsive storm water best management practices (BMPs).

⁸ ODEQ, March 10, 2011. Letter agreement for a source control evaluation of the stormwater pathway at Lampros Steel (ECSI #2441).

- Submitted a SCE letter report prepared by SLR International Corporation to ODEQ in September 2015.⁹ ODEQ's January and March 2017 response letters required that Lampros Properties prepare and submit a work plan identifying additional storm-water SCE and source control measures (SCMs) to meet the objectives of the Voluntary Agreement.
- Submitted a storm-water source control work plan prepared by Integral Consulting Inc. to ODEQ in May 2017.¹⁰
- Submitted a draft SCE report¹¹ prepared by Integral Consulting to ODEQ in August 2019 that summarized source control work completed in accordance with the work plan. According to Integral Consulting:

Storm water and catch basin solids¹² analytical data collected in accordance with the work plan, in addition to data collected prior to 2017, sufficiently characterize storm-water-related COIs for the property for identifying and estimating potential SCM(s).

- Submitted a storm-water source control work plan prepared by ENW to ODEQ in May 2021.¹

Sampling activities conducted for the previous SCE process occurred between 2012 and 2018 and included both catch basin sediment sampling and storm water sampling. Results of this work are described in the August 2019 *Draft Stormwater Source Control Evaluation* report prepared by Integral Consulting.¹⁰ Based on these results, total suspended solids (TSS), polycyclic aromatic hydrocarbons (PAHs), nickel, and chromium were retained as constituents of concern in storm water at the subject site.

2.6.2 NPDES 1200-Z Permit Monitoring

Storm-water monitoring activities have been conducted at the site in accordance with the National Pollutant Discharge Elimination System (NPDES) 1200-Z permit. Under JLW's ownership, storm-water samples have been collected, and results have been reported to ODEQ for sampling years between 2018 and 2023 and for sampling year 2025-2026. A sampling waiver was issued by ODEQ for the 2023-2024 and 2024-2025 sampling years and therefore no storm-water samples were collected during these years. Discharge monitoring reports have included analytical results and documentation of any deviations from permit requirements. Storm-water samples are collected from monitoring location ML001, located at the discharge point from the site storm-water system. Storm-water sample data collected at the site for 1200-Z permit compliance are summarized in Table 2.

⁹ SLR International Corporation, September 8, 2015. *Source Control Evaluation Report* Lampros Properties, 9040 N Burgard Way, Portland, Oregon. Prepared for Lampros Properties, Portland, Oregon by SLR International Corporation, West Linn, Oregon.

¹⁰ Integral Consulting, Inc., May 18, 2017. *Stormwater Source Control Work Plan*, Lampros Steel, 9040 N Burgard Way, Portland, Oregon. Prepared for Lampros Properties Portland, Oregon by Integral Consulting, Inc., Portland, Oregon.

¹¹ Integral Consulting, Inc., August 9, 2019. *Draft Stormwater Source Control Evaluation*, Lampros Steel, 9040 N. Burgard Way, Portland, Oregon. Prepared for Lampros Properties, Portland, Oregon by Integral Consulting, Inc., Portland, Oregon.

¹² Due to the manner in which sediment was assessed (sampling directly from catch basins), this prior assessment likely over-estimates contributions of sediment in stormwater discharge since only suspended sediment would be discharged.

2.6.3 Subsurface Investigations

Subsurface investigations completed at the site are summarized in the previous environmental reports listed in Section 2.5. ODEQ issued a No Further Action (NFA) determination for the petroleum release discovered in 2010.

In 2019, Cascadia advanced 10 soil borings across a broad portion of the site including one boring at the former and current fueling facilities. Soil and ground-water samples were collected and analyzed for select COIs. The findings indicated that constituent concentrations in soil are protective of human health at the site. Several chemicals in ground water exceeded risk-based concentrations for *Ingestion & Inhalation from Tap Water*; however, this exposure pathway is incomplete at the site.

An evaluation of risk to the Willamette River indicated no risk via hazardous substances migrating in ground water due to low concentrations detected and distance to the International Slip. Soil impacts were determined to pose a limited risk to the Willamette River if storm water is exposed to soil that contains hazardous substances since exposure of contaminants resulting in leaching that could cause chemical concentrations to exceed NPDES 1200-Z storm water permit benchmarks.

Shallow composite samples from 0 to 3 feet below ground surface (bgs) and 3 to 8 feet bgs were collected in areas proximate to the subject building prior to initiation of Tier II storm water corrective action activities (for purposes of media management during that work). The samples were analyzed for total petroleum hydrocarbons and select total metals as part of the 2020 Shallow Soil Assessment performed by ENW. The levels of analyzed constituents in 10 samples did not exceed conservative human health risk-based concentrations under the most-stringent land use scenario (i.e., residential). Therefore, detected constituent concentrations in soil do not pose a significant or unacceptable human health risk and do not warrant management during any future excavation activities associated with the Tier II corrective action work.

2.7 Implementation of Source Control Measures

2.7.1 Under Previous Ownership

Source control measures and BMPs implemented prior to JLW's ownership are described by Integral Consulting in their August 2019 *Draft Stormwater Source Control Evaluation* report and NPDES 1200-Z Tier I corrective action reports. SCMs and BMPs implemented at the site include:

- Stormwater catch basin and conveyance line cleaning,
- Installation of berms and a concrete barrier to prevent run-on from adjacent properties,
- Catch basin retrofits, including the installation of Clean Way filters in the northeast and northwest drainage basins (catch basins CB-1, CB-6, CB-7, CB-9, CB-11, and CB-13, shown on Figure 3),
- Asphalt cleaning and asphalt patching in areas of heavily degraded asphalt,
- Surface sweeping to reduce sediments, and
- Placement of filtration booms/bags around catch basins.

2.7.2 Under Current Ownership

The following actions were implemented by JLW since Fall 2019 to improve storm-water quality at the site in accordance with the 1200-Z permit requirements:

- In late 2019, ENW revised the site's Stormwater Pollution Control Plan (SWPCP) to address comments from BES. This included:
 - Reviewing and updating BMPs being used at the site and implementing BMPs designed to address all requirements of the NPDES 1200-Z permit.
 - Implementing a program of employee education and consulting support for monthly site inspections designed to look for potential storm water impacts.
 - Dividing the site into four sub-basins, allowing for more focused source control solutions and performance monitoring.
 - Establishing preventative maintenance schedules and procedures, including monthly sweeping and vacuuming of paved surfaces and routine cleaning of catch basins and inserts.
 - Preparing site-specific monthly and annual site inspection forms, as well as storm system maintenance documentation forms.
 - Requiring scrap steel bins and recycling/waste dumpsters to be covered and located away from catch basins.
 - Prohibiting vehicle cleaning, maintenance, and repair activities.
 - Involving all exterior personnel to immediately identify, contain, report, and remove accidental spills.
 - Implementing annual training of employees in BMPs along with training upon any new hire.
- In November 2019, Krystar filter inserts were installed in all catch basins in the southern drainage basin (see Figure 3). In December 2019, a Krystar catch basin insert was installed in CB-6.
- In November 2019, JLW contracted with a new pavement sweeping company.
- In December 2019, the frequency of catch basin cleaning was increased to at least every two months.
- In March 2020, catch basins CB-27 and CB-30 were replaced (upgraded).
- In April 2020, a camera survey was conducted to evaluate the condition and scaling of storm-water conveyance pipes.
- In Summer 2020, conversations were conducted with the owners of adjoining properties regarding storm water management to prevent run-on to the site. Surface barriers were constructed on site to prevent storm-water run-on from adjoining properties, as shown on Figure 3.
- Site sweeping and catch basin cleaning is conducted at least monthly.
- In 2021, an engineered design for a phased NPDES 1200-Z Tier II Corrective Action Response was prepared and implemented, as described in Section 2.7.3 and 2.8.
- ENW has prepared additional revised versions of the SWPCP as needed to incorporate requirements of the 2021 1200-Z permit and implementation of the Tier II Corrective Actions in 2021.

2.7.3 Additional Source Control Measures - 2021

Elevated concentrations of metals and TSS were identified in storm water samples collected from discharge locations between 2018 and 2020. Tier II Corrective Actions were required by the 1200-Z permit to reduce the concentrations of TSS to below statewide benchmark concentrations. As part of the Tier II Corrective Actions, additional SCMs were implemented on site in a phased approach in 2021. These SCMs included replacement of all storm water catch basins and conveyance lines at the site and installation of a properly sized (engineered) Oldcastle PerkFilter™ storm-water treatment vault in 2021. The treatment vault was installed near the existing discharge point and all storm water from the site catch basins and roof drains discharges to the vault. The current storm-water conveyance system, following implementation of the additional source control measures, is shown in Figure 3.

The prior storm system used for discharge from the site was abandoned in place by Pinnacle Engineering. Existing pipe and manhole inlet/outlet pipes were plugged with concrete/slurry mix. Manhole cones and lids were removed, and the excavation was backfilled with 1-inch aggregate rock and finished to the surface with pavement. The existing conveyance system for off-site storm water was rerouted under a separate permit and discharges to the new storm-water system at the southwestern property boundary, down-gradient of the monitoring location.

Since completion of the 2021 source control measure implementation, off-site sources have been eliminated, and onsite sources are controlled by treatment via the PerkFilter™ treatment vault prior to discharge.

2.8 Description of Storm-water Conveyance System

Please refer to Figure 3 – Storm System.

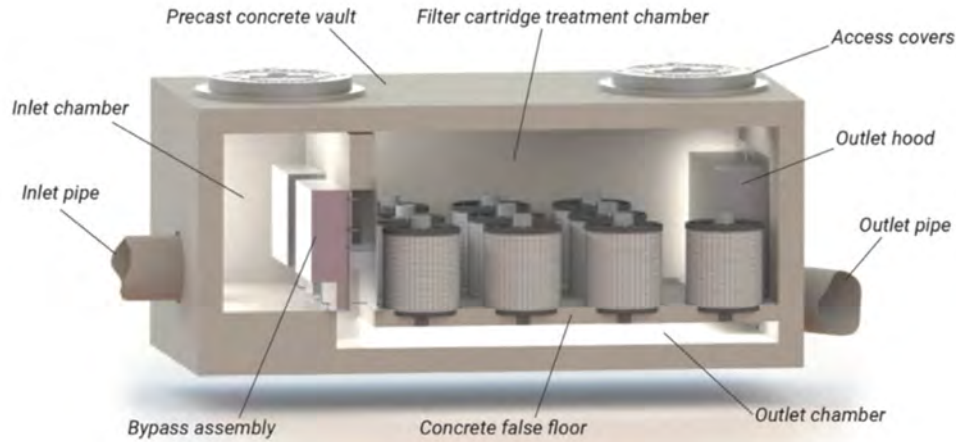
The on-site storm-water conveyance system was installed as part of source control measures implemented in 2021, as described in Section 2.7.

The subject site consists of one large drainage basin that is greater than 90 percent impervious area. A small area of pervious land is present along the eastern property boundary where storm water infiltrates the ground surface or flows to paved areas and is directed into catch basins. Two barriers have been installed to prevent surface flow run-on from off-site sources:

- An asphalt berm located along N. Burgard way on the northeastern property boundary.
- A concrete retention wall located along the western property boundary where an electrical substation is present.

Storm-water collection is accomplished via 29 catch basins, two trench drains, and roof drains located on the south side of the building. Lynch-style catch basins provide pre-treatment by trapping debris and sediment.

All water entering the storm-water collection system is conveyed to a storm-water management vault at the southwestern property margin for treatment prior to discharge off site. Treatment consists of filtration using PerkFilter™ cartridge filters. The PerkFilter™ is a media-filled cartridge filtration device designed to capture and retain sediment, gross solids, metals, nutrients, hydrocarbons, trash, and other debris. Below is a general schematic of the storm-water quality vault.



Discharge from the storm-water management vault is conveyed to a manhole directly adjacent to the vault (storm-water sampling location) and then to a second manhole where it joins off-site storm water¹³ immediately prior to leaving the site and entering the City of Portland Bureau of Environmental Service (BES) storm system. In the BES storm sewer, water is conveyed a short distance before discharging to Outfall WR-123 into the Willamette River at the International Slip (IT Slip), which is approximately 600 feet west of the subject site (see Figure 5).

The storm-water system on site, including primary source control measures and best management practices, are described in detail in the SWPCP¹⁴ prepared by ENW.

3.0 Potential Sources and Contaminants of Interest

3.1 Storm Water

The primary pathway identified for contaminants to migrate to the Willamette River is through the stormwater conveyance system (Discharge Point 001 on Figure 3). Any surface erosion or hazardous material spills have the potential to leave the site via the storm-water conveyance system.

3.1.1 Potential On-Site Sources

Probable and potential sources of storm-water contamination on site include:

- Solids and particulates associated with steel storage,
- Degraded asphalt, and
- Equipment and vehicle movement and parking in exterior areas of the site.

¹³ Stormwater from off-site is conveyed underground in a pre-existing storm system across the subject site at the southern boundary and is routed to the discharge point on the southwestern property margin. It is important to note that off-site stormwater does not comingle with onsite stormwater until after the monitoring point.

¹⁴ ENW, May 2022. *Storm Water Pollution Control Plan, Johnson-Lampros Warehouse, 9040 North Burgard Way, Portland, Oregon.*

3.1.2 Potential Off-Site Sources of Contaminants of Interest

Off-site sources that may contribute to storm water contamination on site include:

- Overland flow of storm water and sediment from adjacent properties.
- Tracking from vehicles entering the property from private roadways that receive limited maintenance.
- Backflow of water from the Willamette River into the storm-water system during high river stages.
- Particulate matter settling on the property as dust from nearby roadways and industrial operations.

Adjacent properties are industrial in use and include storage yards to the north, east, and west, industrial offices and a storage yard to the south, and an electric substation to the northeast. Storm water discharging at Outfall WR-123 into the Willamette River represents comingled storm water from several industrial and commercial properties in the area.

3.1.3 Storm-water Contaminants of Interest

Contaminants of concern (COCs) in Portland Harbor surface water have been previously identified by the U.S. Environmental Protection Agency (EPA) as part of the Portland Harbor Superfund Site Record of Decision (ROD).¹⁵ ENW then reviewed each of the Portland Harbor surface water COCs identified in Table 17 of this ROD, historical site use, prior SCE data, and COIs previously approved by ODEQ,¹⁶ and determined the following COIs for surface water from storm-water sources, which were approved by ODEQ in email correspondence dated March 10, 2025:

- PAHs, specifically: acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, naphthalene, and carcinogenic PAHs as benzo(a)pyrene equivalents (calculated).
- Total polychlorinated biphenyls (PCBs).
- Total metals, specifically: arsenic, chromium, copper, and zinc.
- Phthalates, specifically bis(2-ethylhexyl)phthalate

Additionally, ODEQ requested the following be included in the source control measure evaluation for the site:

- 2,3,7,8-Tetrachlorodibenzodioxin (TCDD) equivalents, per ODEQ, using toxicity equivalents for the following Dioxins and Furans: 2,3,7,8-TCDD/TCDF (tetrachlorodibenzofuran), 1,2,3,7,8-PeCDD/PeCDF, 1,2,3,4,7,8-HxCDD/HxCDF, 1,2,3,6,7,8-HxCDD/HxCDF, 1,2,3,7,8,9-HxCDD/HxCDF, 2,3,4,6,7,8-HxCDF, 1,2,3,4,6,7,8-HpCDD/HpCDF, 1,2,3,4,7,8,9-HpCDF (where Pe = penta, Hx = hexa and Hp = hepta).

¹⁵ Table 17 of the Portland Harbor Superfund Site Record of Decision, dated January 2017 and updates the Table 17.

¹⁶ COIs in Integral's Draft SCE included those approved by ODEQ in a *Stormwater Sampling and Analysis Plan* initially prepared in September 2017 and revised in February 2018, at ODEQ's request.

Additional constituents listed in Table 17 of the ROD were not included as stormwater COIs for the site. A summary of the justification for their exclusion as COIs is included as Table 3.

3.2 Ground Water

3.2.1 Potential On-Site Sources

Based on previous investigations and knowledge of the project site, sources for potential project site-related contaminants to impact the IT Slip section of the Willamette River are as follows:

- Underground storage tanks (USTs) were formerly utilized on-site for fueling operations. In January 2010, one 20,000-gallon gasoline and two 6,000-gallon diesel USTs were decommissioned from the site along with eight fuel dispensers. All current fueling operations on site use above ground storage tanks (ASTs).
- The presence of residual metals, SVOCs, and TPH previously identified in subject site reconnaissance groundwater samples.

3.2.2 Potential Off-Site Sources

Based on information provided in previous environmental reports for the site, surrounding areas have historically been used for industrial activities including pipe and steel production, log storage, and shipping container and repair.

3.2.3 Ground-water Contaminants of Interest

As outlined in ENW's work plan for ground-water monitoring,² COCs in Portland Harbor ground water have been previously identified by the EPA as part of the Portland Harbor Superfund Site ROD.¹⁵ ENW then reviewed each of the Portland Harbor ground water COCs identified in Table 17 of this ROD, historical site use, prior SCE data, and COIs previously approved by ODEQ in a Storm-water SCE Sampling and Analysis Plan prepared by Integral,¹⁷ and determined the following COIs for ground water:

- PAHs, specifically: acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, 2-methylnaphthalene, phenanthrene, pyrene, and benzo(a)pyrene equivalents (calculated).
- PCBs as a total of Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, Aroclor 1260.
- Total metals, specifically: arsenic, cadmium, chromium, copper, lead, manganese, mercury, and zinc.
- Dioxins/Furans (as 2,3,7,8-TCDD equivalents)
- Aliphatic Hydrocarbons (C10-C12)

¹⁷ Integral. September 29, 2017 (Revised February 26, 2018). Stormwater Sampling and Analysis Plan.

These COIs were approved by ODEQ as part of the groundwater monitoring on March 12, 2025. Additional constituents listed in Table 17 of the ROD were not included as groundwater COIs for the site. A summary of the justification for their exclusion as COIs is included as Table 4.

4.0 Evaluation of Contaminant Migration Pathways

4.1 Storm Water Pathways

Only one complete pathway was identified for potential sources of contaminants from the subject site to impact the Willamette River:

- Discharge of contaminants via storm-water conveyance lines to the Willamette River.

Any surface erosion or hazardous material spills have the potential to leave the site via the storm water conveyance system. As described in Section 2.8, all storm water is collected at the site and directed to a treatment vault. After filtration in the vault, storm water is discharged through an outlet manhole from which storm-water samples are collected (monitoring location ML001). Storm water then enters the City of Portland storm sewer and discharges to the Willamette River at Outfall WR-123.

4.2 Ground Water Pathways

Two potential pathways were identified for groundwater impacts to the Willamette River:

- Ground-water transport facilitated by utilities and infiltration of the storm-water conveyance system.
- Ground-water discharge to the Willamette River.

The ground-water transport pathway via utility corridors and the storm-water conveyance system is incomplete and does not contribute COIs to the Portland Harbor. Ground water is present at depths greater than 4 feet bgs, deeper than the typical depth of utility lines of approximately 3 feet bgs, so ground-water transport within the utility corridors is unlikely. Although some aspects of the current stormwater system are completed at depths approximately 6-feet bgs, based on observations made during ongoing storm-water monitoring events, there has been no evidence of groundwater entering into the stormwater system following replacement of the system in 2021. As outlined in the approved work plan,² dry weather flow monitoring was conducted on April 25, 2025, and November 4, 2025, after an approximate 24-hour antecedent dry period. During both the April and November dry weather flow monitoring events, no flow was observed through Monitoring Location ML001, suggesting that ground water is not infiltration the storm water system on site. Hydrographs for the two dry weather flow monitoring events are included in Appendix E.

Direct discharge of ground water to the Willamette River is a complete pathway, though it is considered unlikely to contribute COIs to the Portland Harbor due to the low mobility and low concentrations of the constituents detected in ground water and due to the low gradient, southeast-southwestern groundwater flow direction away from the Willamette River..

5.0 Ongoing Storm-water Management Measures

The following BMPs are employed to minimize pollutant contact with storm-water runoff:

- Fueling of mobile equipment and fleet trucks occurs under cover at the fuel station located southeast of the warehouse. The drain in this area discharges to an oil/water separator (OWS) that is plugged to prevent discharge to the storm-water conveyance system.
- All waste is stored under cover or in lidded containers.
- Drip pans and absorbents are used for any trucks or equipment that are observed to be leaking.
- Any leaks or spills are promptly cleaned up using absorbents or another method that prevents the spill from impacting storm water.
- Secondary containment is used to minimize potential leaks/spills from liquids storage.
- Equipment maintenance is performed inside the warehouse (under cover).
- Routine inspection of truck parking/waiting areas to collect refuse and identify leaks or excessive oil and grease accumulation.
- Monthly sweeping to remove sediment and debris that might otherwise be transported to the storm-water system including vacuuming of paved surfaces in and near truck-travelled areas.
- Routine cleaning of stormwater features to prevent buildup of silt, leaves, and other debris. Cartridge filters are regularly inspected and maintained.
- Routine inspections to identify, contain, report, and remove accidental spills.
- Ongoing maintenance of the storm water collection, conveyance and treatment system following City of Portland recommended BMPs for catch basins and trench drains as well as manufacturer recommendations for the PerkFilter™ treatment system. Sediment accumulation within the storm water collection features, if any, is removed and disposed of following these BMPs.
- Annual training of employees in BMPs.

These practices are outlined in the SWPCP prepared for the facility by ENW and approved by ODEQ.

6.0 Data Collection and Interpretation

6.1 Storm Water Sampling

6.1.1 Overview and Rationale

Storm water samples were collected and analyzed following the methodology described in the Work Plan. The outflow manhole from the filtration vault, prior to discharge to the BES storm sewer system, was designated as the monitoring location (ML001) for the source control evaluation as this flow is representative of treated storm-water discharge entering the BES storm sewer system.

In accordance with the storm event criteria listed in Appendix A of ODEQ's Source Control Evaluation Guidance document, storm-water samples were collected from ML001 during storms meeting the following criteria:

- Antecedent dry period of at least 24 hours preceding the sample event (as defined by <0.1-inch precipitation over the previous 24 hours).
- Minimum predicted rainfall volume of 0.2 inch per storm event.

- Expected duration of storm event of at least three hours.

In addition, an attempt was made to collect two samples representative of “first-flush” conditions (i.e., within the first 30 minutes of storm-water discharge in a single storm event), and all samples within the first three hours of storm-water discharge, to the extent practicable.

6.1.2 SCE Storm Water Sampling

Storm-water sampling events related to the SCE process were completed on the following dates.

- Event #1, November 22, 2022
- Event #2, December 9, 2022
- Event #3, January 13, 2023
- Event #4, March 23, 2023
- Event #5, November 11, 2024
- Event #6, March 12, 2025
- Event #7, January 6, 2026
- Event #8, February 13, 2026

In accordance with the Work Plan,¹ all storm water samples were collected from monitoring location ML001 during a period when storm water was discharging from the filtration vault. Samples were collected as grab samples using decontaminated sampling equipment lowered into the central portion of the flow stream. The sampling location is shown in Figure 3. Samples were temporarily stored on ice until transported to the laboratory under chain-of-custody documentation. Analytical data from the storm water sampling events are summarized in Table 5 and in Section 7.2.

6.2 Ground Water Sampling

In January 2025, ENW observed the advancement of three borings completed as monitoring wells at the site. The monitoring wells, shown in Figure 2, are identified as MW01 through MW03 and are located to provide ground-water quality information upgradient and downgradient of the facility. The well screen interval of each monitoring well is approximately 5 to 15 feet bgs based on known hydrogeologic and observed (at the time of monitoring well drilling) characteristics of the site. Drilling logs are included in Appendix A. The monitoring wells were developed by purging the wells until field monitored parameters were observed to stabilize, or until at least 15 gallons or 10 well volumes were purged.

Between March and December 2025, ENW collected four quarters of ground water samples from each monitoring well for laboratory analysis of COIs identified in Section 3.2.3. Samples were temporarily stored on ice until transported to the laboratory under chain-of-custody documentation. Field sampling data sheets for the sampling events are included in Appendix A. Analytical data from the ground water sampling events are summarized in Table 6 and Section 7.3.

7.0 Data Summary

7.1 Storm Event Data

According to rainfall data gathered from the City of Portland's Hydra Network Shipyard Pump Station (HYDRA-82), the eight storm events during which samples were collected each lasted between 6 and 46 hours in duration and produced between 0.16 inches and 1.37 inches of total measurable precipitation. Storm data available from the Hydra Network website¹⁸ for each event, including time of onset, duration, total precipitation, and sample times are summarized below in Table 7-1.

Table 7-1. Storm Event Data

Storm Event No.	Beginning of Storm Event		Duration (hours)	Total Precipitation (inches)	Sample	
	Date	Time			Date	Time
1	11/22/2022	8:15	6	0.27	11/22/2022	8:40
2	12/9/2022	2:00	46	1.25	12/9/2022	9:30
3	1/13/2023	8:00	25	0.29	1/13/2023	12:15
4	3/23/2023	11:00	6	0.16	3/23/2023	11:10
5	11/10/2024	16:00	36	1.37	11/11/2024	9:50
6	3/12/2025	3:00	23	0.81	3/12/2025	7:00
7	1/6/2026	13:00	10	0.96	1/6/2026	13:08
8	2/13/2026	15:00	6	0.21	2/13/2026	15:38

A summary of the nature of each of the sampling storm events regarding storm event criteria is presented below. Precipitation hydrographs showing the rainfall over time are included in Appendix E.

- Storm event #1 (November 22, 2022).** The storm event began with steady precipitation around 8:15 am on November 22, 2022, and lasted approximately 0.5 hours prior to the time the sample was collected. A total of 0.27 inches of rain was produced during the storm event, with 0.04 inches at the time of sample collection. The sample was collected at 8:40 am. This was a first-flush sample.
- Storm Event #2 (December 9, 2022).** Storm event #2 consisted of several rain events separated by dry periods lasting 1 to 4 hours. The sample was collected at 9:30 am on December 9, 2022, following the third rain event with a total of 0.19 inches of rain at the time of sample collection. Storm event #2 lasted approximately 46 hours and produced approximately 1.25 inches of rain. Storm water was flowing upon arrival to the site.
- Storm Event #3 (January 13, 2023).** The storm event began with steady precipitation at 1:00 am on January 13, 2023, and lasted 25 hours, with three short breaks in rainfall on the afternoon and night of January 13 ranging from 1 to three hours. A total of 0.29 inches of rain was produced during the storm event, with 0.15 inches at the time of sample collection. The sample was collected at 12:15 pm. Storm water was flowing upon arrival at the site.

¹⁸ City of Portland, <https://aquarius.portlandoregon.gov/Data/Map/Parameter/Precip%20Increm/Location/State/>

- **Storm Event #4 (March 23, 2023).** Storm event #4 began at 7 am with a small break in rainfall around 8 to 9 am. The sample was collected at 11:10 am on March 23, 2023, during particularly heavy rainfall. Storm event #4 lasted approximately 6 hours and produced approximately 0.16 inches of rain, of which 0.1 inches of rain occurred at the time the sample was collected. This was a first-flush sample.
- **Storm event #5 (November 10, 2024)** The storm event began around 4 pm on November 10, 2024, after approximately 4.5 days without precipitation, and lasted approximately 36 hours with brief periods of no precipitation. A total of 1.37 inches of rain was produced during the storm event, with 0.6 inches of rain measured prior to sample collection. The sample was collected at 9:50 am on November 11, 2024, when the system was observed to be discharging.
- **Storm Event #6 (March 12, 2025)** Storm event #2 began the morning of March 12, 2025, around 3 am with light showers. The storm event was preceded by a dry period of approximately 2 days. The storm event lasted 23 hours and produced 0.81 inches of measurable rain. The storm-water sample was collected at 7:00 am on March 12, 2025, following first discharge observed at 6:40 am. This was a first-flush sample.
- **Storm Event #7 (January 6, 2026)** Storm event #3 began around 1 pm on January 6, 2026, after approximately 2 days with no precipitation. The storm event lasted approximately 10 hours and produced 0.96 inches of rain. Storm-water sampling was conducted at 6:08 am on January 6, 2026, when the system was observed to be discharging.
- **Storm Event #8 (February 13, 2026)** Storm event #4 consisted of steady light rain beginning at approximately 3 pm on February 13, 2026, lasted approximately 6 hours, and produced a total of approximately 0.21 inches of precipitation. It was preceded by an approximately 3-day dry period. The storm-water sample was collected at 3:38 pm on February 7, 2026, shortly after first discharge. This was a first-flush sample.

In general, the storm and sampling criteria described in Section 6.1.2 were met during the sampling events, with the exception of Storm Event #4, which saw slightly less than 0.2 inches of precipitation per storm event. The antecedent dry period criteria were met before Storm Events #1, #4, #5, #6, #7, and #8. Based on sample time, Sampling Events #1, #4, #6, and #8 are considered to represent first flush conditions and Sampling Events #2, #3, #5, and #7 represent stabilized storm-water flow conditions.

7.2 Storm Water Analytical Results

ENW collected storm-water samples from the discharge point during the storm events listed above and submitted the samples for laboratory analysis of the COIs listed in Section 3.1.3. Based on the non-detect results or low detected concentrations in the first four sampling events, bis(2-ethylhexyl)phthalate, PAHs, and dioxins/furans were not analyzed during some or all of the additional four sampling events.

Storm-water analytical results are summarized in Table 5. Results of the four most recent samples collected for each analyte are described in the subsections below since these results are most characteristic of current storm-water treatment operation and implementation of best management practices thus best characterize SCM performance. Laboratory analytical reports are included in Appendix F. The analytical results for the four most recent storm water sampling events for each analyte were compared to the EPA Portland Harbor ROD cleanup levels (CULs).

7.2.1 Total Metals

The laboratory analytical results indicated the following:

- Arsenic was only detected in 50% pf the samples collected during last four sampling events, at concentrations of 1.0 and 2.7 micrograms per Liter ($\mu\text{g/L}$), respectively, exceeding the ROD CUL by a factor of 55 to 150. While some elevated concentrations were observed in the samples collected during Sampling Events #1 through #4, they are likely associated with unstabilized conditions following the installation of the new storm-water conveyance system. The latter four Sampling Events are considered more representative of current site conditions.
- Chromium was only detected in 50% pf the samples collected during last four sampling events, at concentrations of 1.7 and 3.2 $\mu\text{g/L}$, below the ROD CUL.
- Copper was not detected above the laboratory reporting limit of 5 $\mu\text{g/L}$.
- Zinc was detected in all of the last four sample events, at concentrations between 21 and 37 $\mu\text{g/L}$. The concentration of 37 $\mu\text{g/L}$, detected during Sampling Event #6, is essentially equal to the ROD CUL of 36.5 $\mu\text{g/L}$. The other concentrations did not exceed the ROD CUL.

7.2.2 Polycyclic Aromatic Hydrocarbons

The laboratory analytical results indicated the following:

- Acenaphthene was only detected in 25% pf the samples collected during last four sampling events, at 0.021 $\mu\text{g/L}$, which is below its ROD CUL of 0.2 $\mu\text{g/L}$.
- Anthracene was only detected in 25% pf the samples collected during last four sampling events, at 0.014 $\mu\text{g/L}$, which is below its ROD CUL of 0.2 $\mu\text{g/L}$.
- All other PAHs and cPAHs (as benzo[a]pyrene equivalents) were not detected above laboratory reporting limits in any of the last four sampling events.

7.2.3 Polychlorinated Biphenyls

The laboratory analytical results indicated the following:

- PCBs were detected in all of the sample events, at concentrations between 7.01×10^{-4} and 1.1×10^{-2} $\mu\text{g/L}$, exceeding its JSCS SLV during all four sampling events by factors between 108 and 1694 (Events #1 through #4).

7.3 Ground Water Analytical Results

Ground water samples were collected from on-site monitoring wells MW01 through MW03 on March 21, June 18, September 25, and December 11, 2025, and submitted for laboratory analysis of COIs identified in section 3.2.3. Analytical results are summarized in Table 6 and the sections below. Laboratory analytical reports are included in Appendix F.

7.3.1 Total Metals

- Arsenic was detected in each ground-water sample at concentrations between 0.81 and 10 $\mu\text{g/L}$, exceeding the ROD CUL of 0.018 $\mu\text{g/L}$ by exceedance factors between approximately 44 and 555.
- Manganese was detected in each ground-water sample at concentrations between 240 and 1100 $\mu\text{g/L}$. With the exception of the samples collected from MW01 in March and June 2025, the

detected concentrations exceeded the ROD CUL of 430 µg/L. Exceedance factors ranged from approximately 0.1 to 1.6.

- Cadmium, chromium (III), copper, lead, and zinc were not detected above the laboratory reporting limit in any of the samples collected between March and September 2025 and were thus excluded from analysis during the December 2025 sampling round. Mercury was not detected in the first two samples collected from each well and was therefore excluded from analysis during the two subsequent sampling rounds.

7.3.2 Polychlorinated Biphenyls

PCB Aroclors were not detected above the laboratory reporting limits in the samples collected during the first three ground-water sampling rounds. Based on these results, PCBs were not analyzed during the fourth sampling round.

7.3.3 Polycyclic Aromatic Hydrocarbons

Several PAHs were detected in each monitoring well during each sampling event. The following PAHs were detected at concentrations exceeding the applicable ROD CUL in one or more sampling events:

- Benzo(a)anthracene was only detected in 42% of the samples collected during last four monitoring events, between 0.015 and 0.030 µg/L. Exceedance factors ranged between 2.3 and 24.
- Benzo(a)pyrene was only detected in 48% of the samples collected during last four monitoring events, between 0.002 and 0.049 µg/L. Exceedance factors ranged between 15 and 407.
- Benzo(b)fluoranthene was detected in 75% of the samples collected during last four monitoring events, between 0.0013 and 0.06 µg/L. Exceedance factors ranged between 0.08 and 49.
- Benzo(k)fluoranthene was only detected in 50% of the samples collected during last four monitoring events, between 0.0016 and 0.02 µg/L. Exceedance factors ranged between 0.23 and 14.
- Chrysene was only detected in 50% of the samples collected during last four monitoring events, between 0.0032 and 0.048 µg/L. Exceedance factors ranged between 1.5 and 36.
- Indeno(1,2,3-cd)pyrene was only detected in 58% of the samples collected during last four monitoring events, between 0.0022 and 0.039 µg/L. Exceedance factors ranged between 0.8 and 31.
- cPAHs, as benzo(a)pyrene equivalents, was detected in 75% of the samples collected during last four monitoring events, between 0.00013 and 0.063 µg/L. Exceedance factors ranged between 0.08 and 521.

PAHs were not detected at concentrations exceeding the ROD CUL in any of the groundwater samples collected in December 2025.

7.3.4 Dioxins/Furans

2,3,7,8-TCDD (dioxin), as toxic equivalents, was detected at low concentrations or was not detected in groundwater during the first three sampling rounds. Based on this, it was excluded from analysis in samples collected in December 2025.

Additional information on protocol used to evaluate dioxins. According to ODEQ's *Human Health Risk Assessment Guidance* (October 2010), toxicity equivalency quotients (TEQs) can be used to evaluate toxic effects of polychlorinated dibenzo-p-dioxins (CDDs), polychlorinated dibenzofurans (CDFs), and co-planar (dioxin-like) PCBs congeners relative to 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD). Concentrations of congeners are multiplied by their TEFs to estimate the toxicity of these congeners relative to 2,3,7,8-TCDD; the resulting concentrations may be summed into a total of 2,3,7,8-TCDD toxicity equivalence (TEQ) concentration. The TEQ equation is present below for n compounds with congeners represented by compound $i=1$:

$$TEQ = \sum_{i=1}^n (C_i * TEF_i)$$

Where: TEQ = Toxicity Equivalence Quotient
 C_i = concentration of the i th individual compound
 TEF_i = i th compound's TEF

TEQ values are provided in the following table:

Table 7-2. TEQ Values

Compound	TEQ
Polychlorinated dibenzo- <i>p</i> -dioxins (PCDDs)	
2,3,7,8-TCDD	1
1,2,3,7,8-PeCDD	1
1,2,3,4,7,8-HxCDD	0.1
1,2,3,6,7,8-HxCDD	0.1
1,2,3,7,8,9-HxCDD	0.1
1,2,3,4,6,7,8-HpCDD	0.01
OCDD	0.0003
Polychlorinated dibenzofurans (PCDFs)	
2,3,7,8-TCDF	0.1
1,2,3,7,8-PeCDF	0.03
2,3,4,7,8-PeCDF	0.3
1,2,3,4,7,8-HxCDF	0.1
1,2,3,6,7,8-HxCDF	0.1
1,2,3,7,8,9-HxCDF	0.1
2,3,4,6,7,8-HxCDF	0.1
1,2,3,4,6,7,8-HpCDF	0.01
1,2,3,4,7,8,9-HpCDF	0.01
OCDF	0.0003

Source: van den Berg et al. (2006); WHO's website on dioxin TEFs, available at http://www.who.int/pcs/assessment/tef_update/en/

7.3.5 Aliphatic Hydrocarbons (C10-C12)

Aliphatic hydrocarbons (C10-C12) were not detected above the laboratory reporting limits in the samples collected during the first three ground-water sampling rounds. Based on these results, aliphatic hydrocarbons (C10-C12) were not analyzed during the fourth sampling round.

8.0 Source Control Evaluation

Following the implementation of source control measures at the site, including the installation of a new storm-water conveyance system including a filtration vault, it is ENW's opinion that the storm-water source has been adequately controlled and that the site does not represent a significant current or future source of contaminants to the Willamette River. Data evaluation and other lines of evidence are discussed below.

It is our opinion that the analytical data are appropriate for the intended purpose. Data quality exceptions are noted in the laboratory analytical reports in Appendix F. These limited exceptions are not considered to interfere with the evaluation of source control because consistent and replicated data are available with respect to COIs.

8.1 Data Evaluation

The environmental site assessments conducted at the subject property by others, in combination with site inspections as part of the development of the source control evaluation work plan, have led to the development of the list of COIs for this assessment. Based on these prior assessments, the site does not appear to have been significantly impacted by any historical releases or site operations. Additionally, the recent SCE storm water and ground water sampling shows that the source control measures implemented at the subject property provide effective control of typical potential industrial pollutants.

8.1.1 Evaluation of Current Storm Water Data with ODEQ's *Tool for Evaluating Storm Water Data*

ENW compared the analytical data from the storm-water samples collected during each Sampling Event to the charts presented in the ODEQ *Guidance for Evaluating the Stormwater Pathway at Upland Sites: Appendix E: Tools for Evaluation Stormwater* document to evaluate if the concentrations of contaminants were representative of typical industrial storm water. Of the 13 constituents with published charts, arsenic, chromium, zinc, PAHS, PCBs, and 2,3,7,8-TCDD were detected in storm-water samples collected at the site. The remaining constituents were not identified as COIs or COCs or were not detected in the storm water at the site.

The charts provided in the guidance document show detected concentrations of contaminants in storm water at numerous industrial sites in the Portland Harbor area to evaluate the potential impacts of industrial activity on storm water. The concentrations are charted in ranked order from least to greatest concentration. The charted data form curves which include a flatter portion at lower concentrations followed by a steep portion. The transition area is called the "knee" of the curve. Concentrations within the flat area of the curve are considered typical of industrial sites, while concentrations higher than the knee may represent elevated concentrations.

Charts showing the published curve data for arsenic, chromium, zinc, PAHS, PCBs, and 2,3,7,8-TCDD, and the detected concentrations of these analytes at the site are included as Appendix G. Results indicate:

- All six constituents evaluated had detected concentrations within the low range of the lower/flatter portions of the curves suggesting that storm water is not being unusually impacted by contaminants at the site and is therefore representative of "typical" industrial storm water.

8.2 Other Lines of Evidence

The 2017 EPA Portland Harbor Record of Decision and subsequent sediment sampling indicate that select dioxins/furans congeners are risk drivers of sediment remediation in some areas of the Willamette River. These congeners are identified as 1,2,3,7,8-PeCDD, 2,3,4,7,8-PeCDF, 2,3,7,8-TCDF, 1,2,3,4,7,8-HxCDF, and 2,3,7,8-TCDD.¹⁹ As shown in Table 7, while a few dioxins/furans congeners have been detected above laboratory method reporting limits in storm water from the subject site, none of the detected congeners include the identified congeners that drive risk (i.e., 1,2,3,7,8-PeCDD, 2,3,4,7,8-PeCDF, 2,3,7,8-TCDF, 1,2,3,4,7,8-HxCDF, or 2,3,7,8-TCDD). Therefore, it can be reasonably assumed that storm water from the subject site is not a source of identified dioxins/furans congeners driving risk in the river sediment.

Additionally, the following lines of evidence suggest that contaminants in storm water will be continued to be controlled into the future:

- The subject property is completely covered with impermeable surfaces except for the eastern edge where no industrial activities have taken place.
- All storm water from the site is directed to the storm water treatment vault prior to discharge.
- The storm system and treatment vault are maintained according to manufacturer or City of Portland guidance to prevent the buildup or discharge of COIs in storm water.
- Ongoing implementation of the BMPs described by the SWPCP should continue to effectively control the site's current, typical commercial storm water contaminant sources.
- Any changes to site operations with the potential to impact storm water would be conducted according to ODEQ's NPDES program. At a minimum, changes would require updating the SWPCP thereby ensuring appropriate storm water source control measures are in place.

8.2.1 Evaluation of Current Ground Water Data

Figures 4A through 4D present the ground water potentiometric surface plots generated from the ground water elevations measured during the four quarterly ground water monitoring events in 2025. The potentiometric surface plots generally indicate a southeastern flow direction with seasonal variation to the southwest.

Based on ground-water analytical data collected at the site, ground water appears to be most impacted near the upgradient northern site boundary (MW01), with concentrations of total arsenic and total manganese generally detected at similar or higher concentrations relative to hydraulically downgradient monitoring wells MW02 and MW03. This data suggests a possible upgradient source, or that impacts may be area-wide associated with past filling of lowland areas and the resulting degradation of vegetative matter.²⁰

Furthermore, ENW performed dry season observation of storm-water monitoring location ML001 to inspect for potential intrusion of groundwater into the storm-water system. During this inspection, no evidence of flow was observed in ML001, suggesting that ground water is not entering the storm-water system on site.

¹⁹ ODEQ, Staff Report: Conditional Source Control Decision City of Portland Outfalls Project in Portland Harbor, 2021.

²⁰ Hussein I. Abdel-Shafy, Mona S.M. Mansour, Egyptian Petroleum Research Institute, *A review on polycyclic aromatic hydrocarbons: Source, environmental impact, effect on human health and remediation*, March 2016.

9.0 Findings and Conclusions

ENW has conducted SCE activities including reviews of site storm-water source control measures and evaluation of storm water and ground water data at the project site located at 9040 N Burgard Way in Portland, Oregon. These activities were performed in accordance with a work plan prepared by ENW in 2025 and approved by ODEQ; ODEQ's *Guidance for Evaluating the Stormwater Pathway at Upland Sites*, dated January 2009 (updated October 2010); ODEQ/EPA's *Portland Harbor Joint Source Control Strategy*, dated December 2005; and the *EPA Record of Decision, Portland Harbor Superfund Site*, dated January 2017.

The results of the SCE activities indicate the following:

1. Existing and potential facility-related contaminant sources have been identified and characterized during investigations performed at the site, including storm water and ground water sampling. The identified COIs and potential pathways are:
 - a. In storm water, several COIs (arsenic, zinc, PCBs, and 2,3,7,8-TCDD [dioxin] equivalents) were identified in concentrations exceeding their respective ROD CUL. However, all concentrations in storm water were below "typical industrial stormwater concentrations" per ODEQ's *Tool for Evaluating Stormwater Data* and are in the lower part of the flat portion of the curve (see Appendix G).
 - b. Based on available data, the discharge of contaminants to the Willamette River via storm-water conveyance lines pathway is considered controlled and insignificant.
 - c. Discharge of contaminants to surface water from site ground water is considered unlikely. Potential ground-water infiltration of the storm-water conveyance system has not been observed during dry seasons and recent ground-water data collected from onsite monitoring wells suggests a southeasterly flow of ground water beneath the site along with a possible upgradient (offsite) source, or that impacts may be area-wide associated with past filling of lowland areas and the resulting degradation of vegetative matter.
2. Potential storm-water contaminant sources are being controlled to the extent feasible by implementing BMPs, including the maintenance of the storm-water conveyance system and filtration vault.

Based on the findings of this SCE, no further investigation and/or remedial action are anticipated to be needed at this time. Therefore, based on ongoing management of onsite storm-water facilities, we request that ODEQ issue a formal Source Control Decision and subsequent determination of No Further Action Required for this facility, considering that (1) the site has been adequately characterized, sources and pathways for mobilization of contaminants have been addressed, and sufficient monitoring has been completed to confirm that contaminants are not leaving the site at levels presenting unacceptable risk; and (2) the site is eligible for a determination that it is not a past, current or reasonably likely future source of contamination to the Willamette River and that additional source control measures are not required.

10.0 Limitations

The scope of this report is limited to observations made during on-site work, interviews with knowledgeable sources, and review of readily available published and unpublished reports and literature. As a result, these conclusions are based on information supplied by others as well as interpretations by qualified parties.

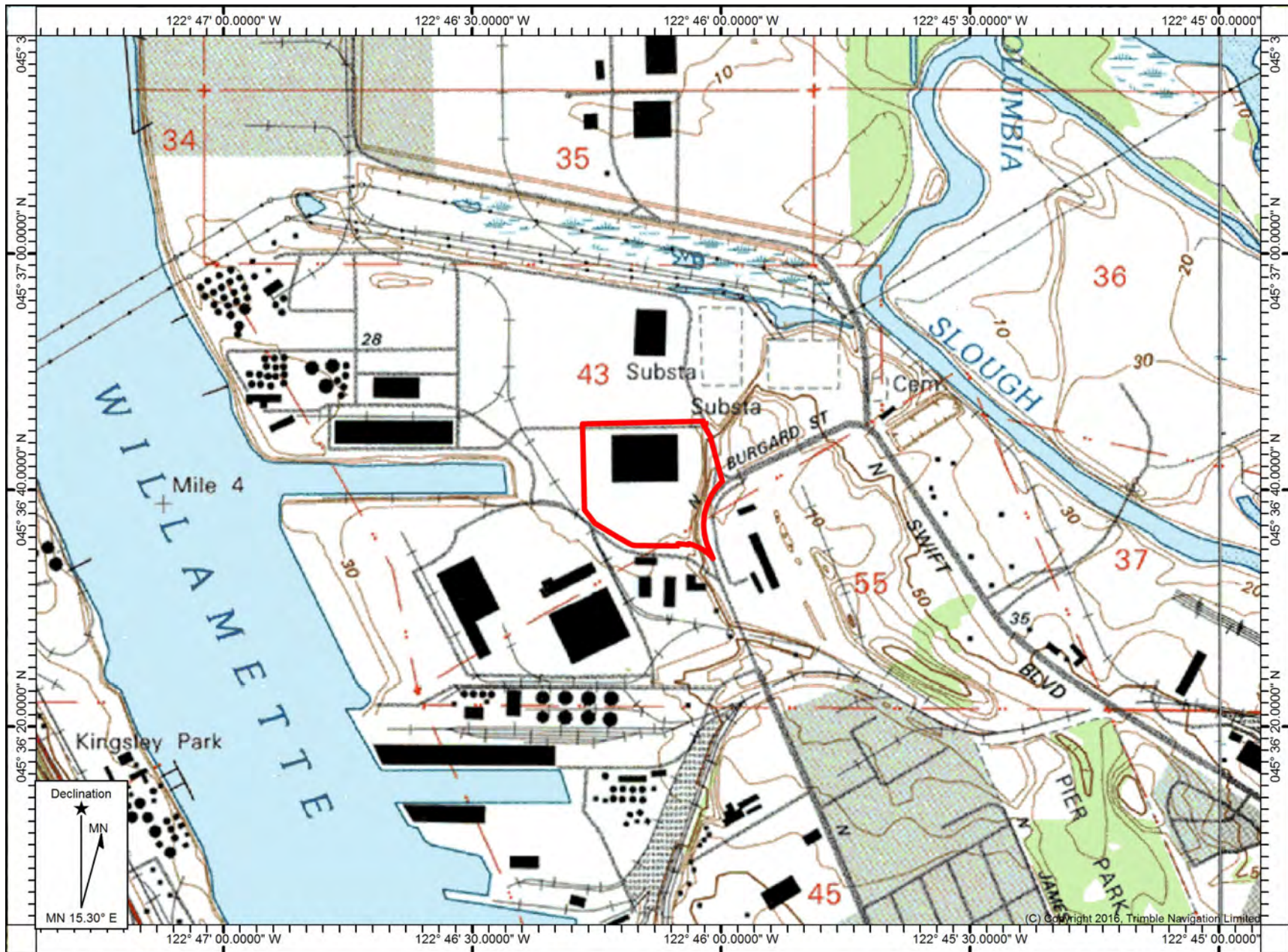
The focus of the work does not extend to the presence of the following conditions:

1. Naturally occurring toxic or hazardous substances in the subsurface soils, geology, and water,
2. Toxicity of substances common in current habitable environments, such as stored chemicals, products, building materials and consumables,
3. Contaminants or contaminant concentrations that are not a concern now but may be under future regulatory standards,
4. Unpredictable events that may occur after ENW's site work, such as illegal dumping or accidental spillage.

There is no practice that is thorough enough to absolutely identify the presence of all hazardous substances that may be present at a given site. ENW's investigation has been focused only on the potential for contamination that was specifically identified in the Scope of Work. Therefore, if contamination other than that specifically mentioned is present and not identified as part of a limited Scope of Work, ENW's environmental investigation shall not be construed as a guaranteed absence of such materials. ENW has endeavored to collect representative analytical samples for the locations and depths indicated in this report. However, no sampling program can thoroughly identify all variations in contaminant distribution.

We have performed our services for this project in accordance with our agreement and understanding with the client. This document and the information contained herein have been prepared solely for the use of the client.

ENW performed this study under a limited scope of services per our agreement. ENW assumes no responsibility for conditions that we did not specifically evaluate or conditions that were not generally recognized as environmentally unacceptable at the time this report was prepared.



Name: LINNTON
Date: Jan 1, 1990



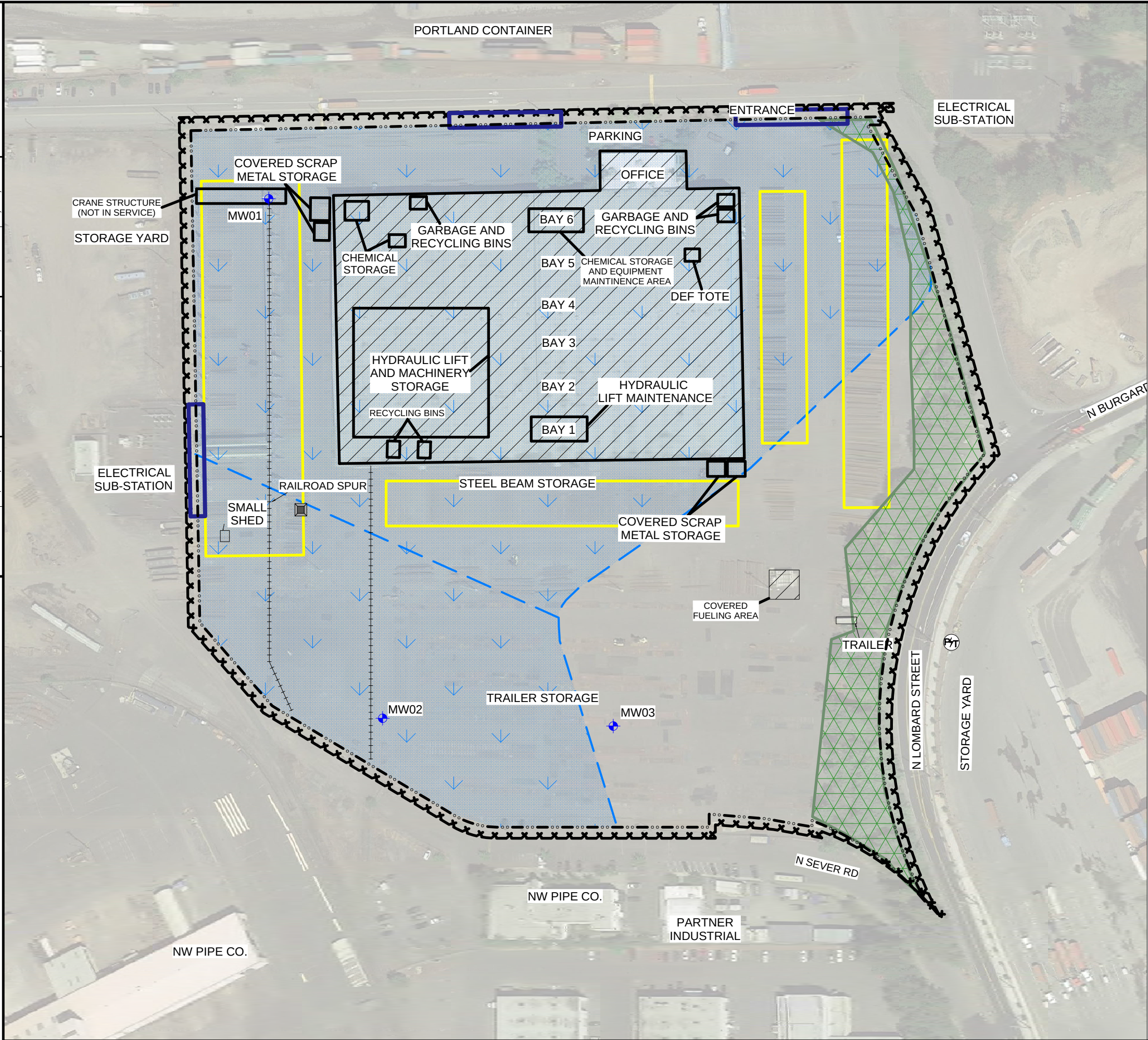
Date Drawn: 7/8/2019
CAD File Name: 1355-19001-fig1sv_map(v01)
Drawn By: JOB
Approved By: LDG

Lampros Steel
9040 N Burgard Way
Portland, Oregon

Site Vicinity Map

Project No.
1355-19001

Figure No.
1



LEGEND:

- | | |
|---|--|
|  | SUBJECT BUILDINGS |
|  | SUBJECT PROPERTY BOUNDARIES |
|  | MANUFACTURED STEEL STORAGE LOCATION |
|  | PERVIOUS SURFACE |
|  | WETLAND (PER 1915 TOPOGRAPHIC MAP) |
|  | SURFACE BARRIERS TO REDUCE OFF SITE SURFACE WATER RUN-ON |
|  | POLE TRANSFORMER |
|  | PAD TRANSFORMER |
|  | WELL |
| DEF: | DIESEL EXHAUST FLUID |
|  | CHAIN LINK FENCE |
|  | TRIBUTARIES OR CHANNELS OF GATTON CREEK (PER 1915 TOPOGRAPHIC MAP) |

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2018 AND ENW FIELD NOTES.
2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION.

APPROXIMATE SCALE

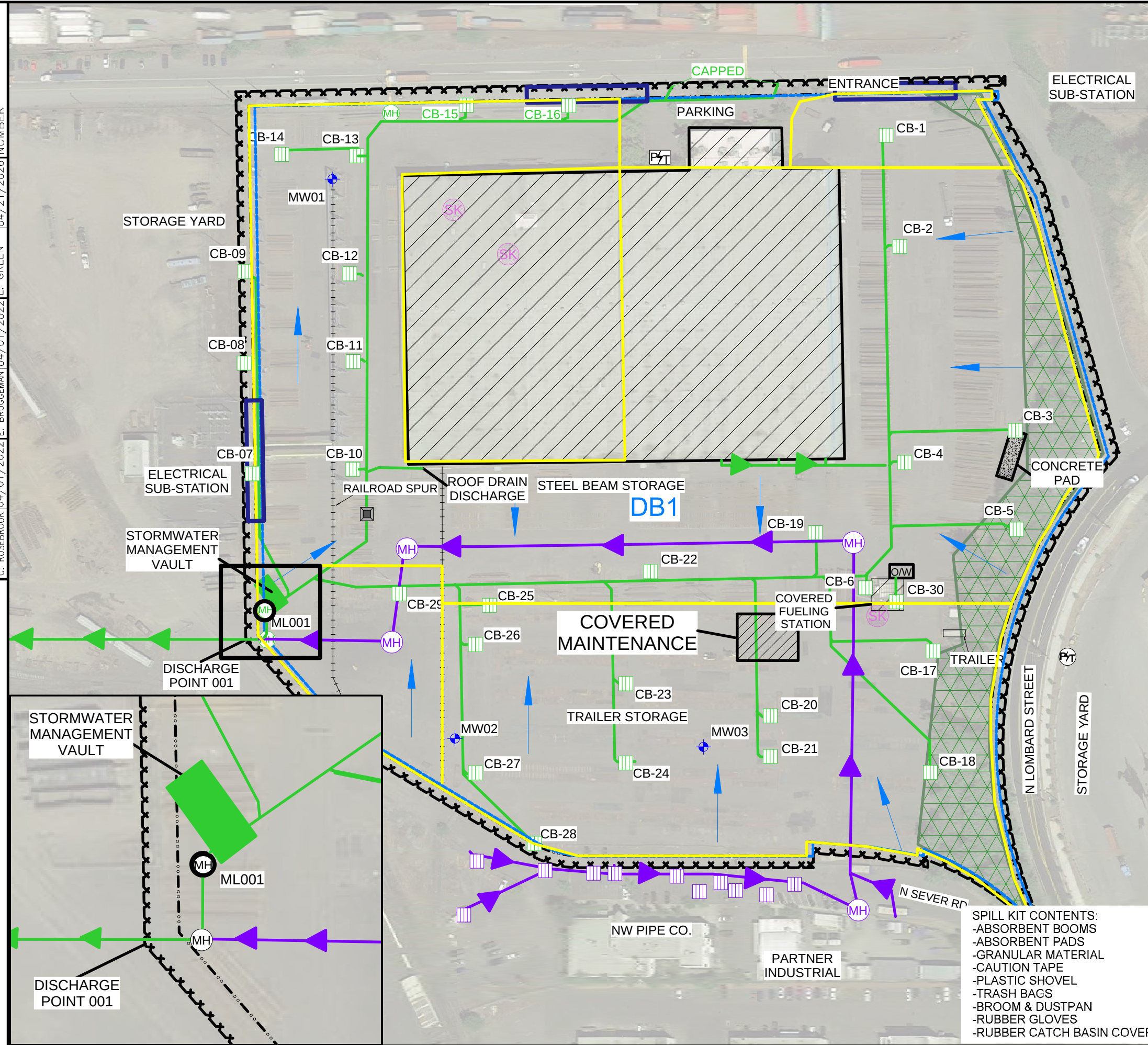


PO BOX 14488, PORTLAND, OREGON 97293
P: (503)452-5561, E: ENW@EVREN-NW.COM

FIGURE 2

SITE PLAN

LAMPROS STEEL
9040 N BURGARD WAY
PORTLAND, OREGON



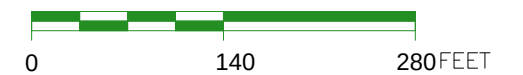
LEGEND:

- | | | | |
|---|--|---|---------------------|
|  | SUBJECT BUILDINGS | | |
|  | SUBJECT PROPERTY BOUNDARIES | | |
|  | DRAINAGE BASIN | | |
|  | PERVIOUS SURFACE | | |
|  | SURFACE FLOW DIRECTION | | |
|  | POLE TRANSFORMER |  | MANHOLE |
|  | PAD TRANSFORMER |  | WELL |
|  | CHAIN LINK FENCE |  | OIL WATER SEPARATOR |
|  | ONSITE STORM WATER SEWER | | |
|  | CATCH BASIN | | |
| ML001  | MONITORING POINT | | |
|  | SPILL KIT (DISPOSAL DRUM, FILTER SOCKS, ABSORBANT MEDIA, AND PADS) | | |
| SDMH: | STORM DRAIN MANHOLE | | |
|  | SURFACE BARRIERS TO REDUCE OFF SITE SURFACE WATER RUN-ON | | |
|  | OFFSITE STORM WATER (NO ONSITE CONTRIBUTION) | | |
|  | LEASED AREAS | | |

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2018 AND ENW FIELD NOTES.
2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION.

APPROXIMATE SCALE



PO BOX 14488, PORTLAND, OREGON 97293
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FIGURE 3
STORM WATER SYSTEM

LAMPROS STEEL
9040 N BURGARD WAY
PORTLAND, OREGON



LEGEND:

SUBJECT PROPERTY BOUNDARY

SUBJECT BUILDING

STORMWATER VAULTS

STORM WATER LINE

GROUND WATER POTENTIOMETRIC SURFACE
0.1-FOOT CONTOURS (MARCH 26, 2025)
(i = 0.0013 FT/FT)

INFERRED GROUND WATER FLOW

MONITORING WELL

CATCH BASIN

MANHOLE

MONITORING POINT

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2023 AND ENW FIELD NOTES.

2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.

3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION

0100200400

Feet

(APPROXIMATE 1" = 150 FEET WHEN PRINTED 11X17)

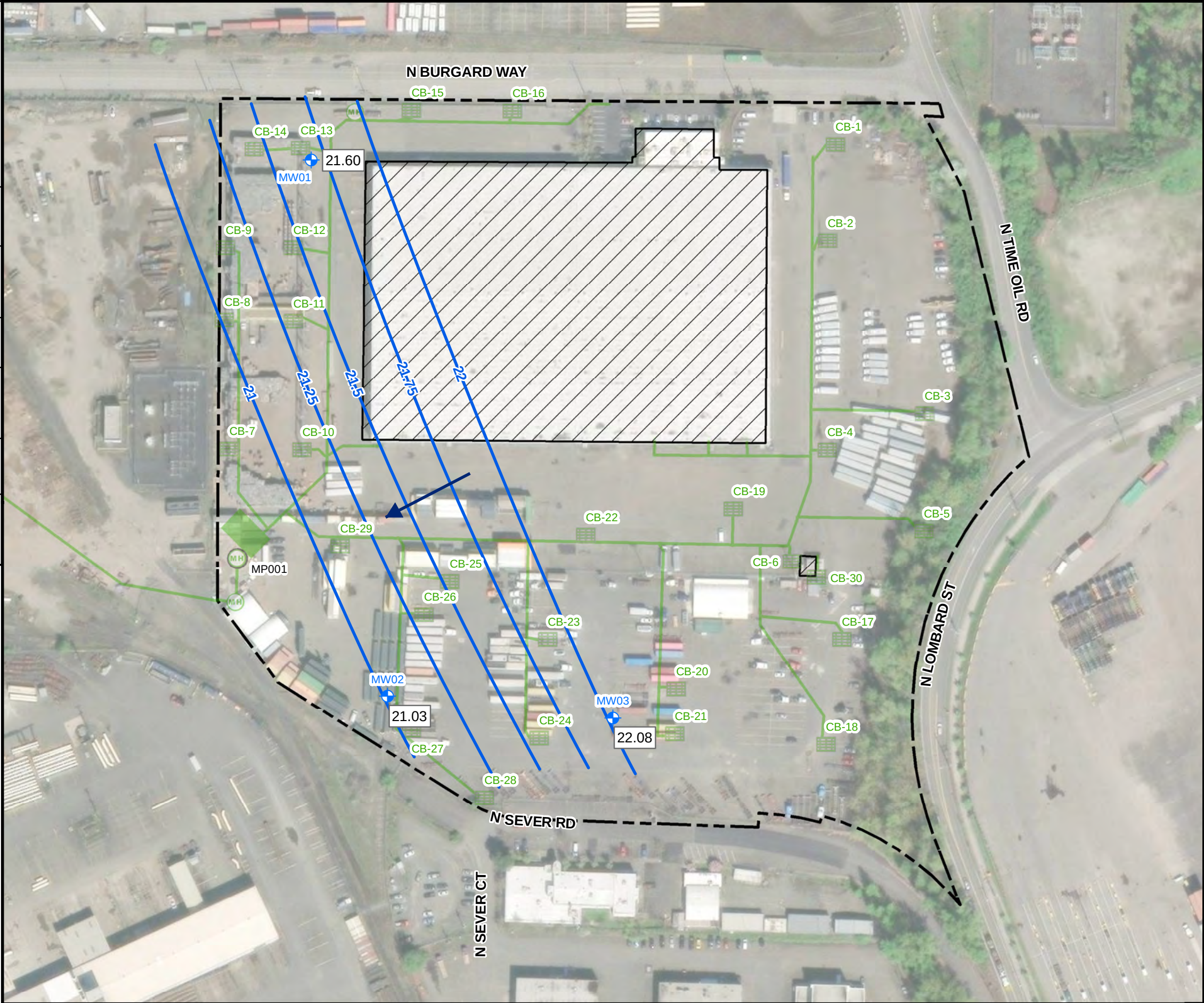


FIGURE 4A

POTENTIOMETRIC SURFACE MAP
(FIRST QUARTER, 2025)

LAMPROS STEEL
9040 N BURGARD WAY
PORTLAND, OREGON

DRAWN BY	M. FERRY	10/2/2025	CHECKED BY	T. BENNETT	10/2/2025	APPROVED BY	L. GREEN	10/2/2025	DRAWING NUMBER	1355-19001(V03)



LEGEND:

SUBJECT PROPERTY BOUNDARY

SUBJECT BUILDING

STORMWATER VAULTS

STORM WATER LINE

GROUND WATER POTENTIOMETRIC SURFACE
0.25-FOOT CONTOURS (JUNE 18, 2025)
(i = 0.0033 FT/FT)

INFERRED GROUND WATER FLOW

MONITORING WELL

CATCH BASIN

MANHOLE

MONITORING POINT

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2023 AND ENW FIELD NOTES.

2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.

3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION

0100200400

Feet

(APPROXIMATE 1" = 150 FEET WHEN PRINTED 11X17)



FIGURE 4B

POTENTIOMETRIC SURFACE MAP
(SECOND QUARTER, 2025)

LAMPROS STEEL
9040 N BURGARD WAY
PORTLAND, OREGON

DRAWN BY		CHECKED BY	APPROVED BY	DRAWING NUMBER
M. FERRY	10/23/2025	T. BENNETT	L. GREEN	
				1355-19001(V02)



LEGEND:

SUBJECT PROPERTY BOUNDARY

SUBJECT BUILDING

STORMWATER VAULTS

STORM WATER LINE

GROUND WATER POTENTIOMETRIC SURFACE
0.25-FOOT CONTOURS (SEPTEMBER 24, 2025)

INFERRED GROUND WATER FLOW

MONITORING WELL

CATCH BASIN

MANHOLE

MONITORING POINT

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2023 AND ENW FIELD NOTES.
2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION

0100200400

Feet

(APPROXIMATE 1" = 150 FEET WHEN PRINTED 11X17)





FIGURE 4C

**POTENTIOMETRIC SURFACE MAP
(THIRD QUARTER, 2025)**

LAMPROS STEEL
9040 N BURGARD WAY
PORTLAND, OREGON



LEGEND:

SUBJECT PROPERTY BOUNDARY

SUBJECT BUILDING

STORMWATER VAULTS

STORM WATER LINE

GROUND WATER POTENTIOMETRIC SURFACE
0.10-FOOT CONTOURS (DECEMBER 11, 2025)

INFERRED GROUND WATER FLOW

MONITORING WELL

CATCH BASIN

MANHOLE

MONITORING POINT

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2023 AND ENW FIELD NOTES.

2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.

3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION

0100200400

Feet

(APPROXIMATE 1" = 150 FEET WHEN PRINTED 11X17)



EVRENNORTHWEST

environmental · natural resource consultants

FIGURE 4D

POTENTIOMETRIC SURFACE MAP
(FOURTH QUARTER, 2025)

LAMPROS STEEL
9040 N BURGARD WAY PORTLAND,
OREGON

DRAWN BY		CHECKED BY	APPROVED BY	DRAWING NUMBER
H. ROMER	4/24/2025	T. BENNETT	L. GREEN	
				1355-19001(V05)



LEGEND:

SUBJECT PROPERTY BOUNDARY

SUBJECT BUILDING

STORM WATER LINE

INFERRED STORM WATER LINE

OUTFALL

MONITORING POINT

- NOTES:**
 1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2023 AND ENW FIELD NOTES.
 2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
 3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION

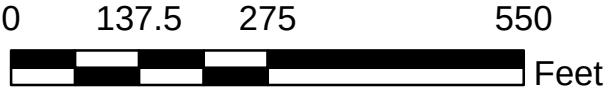


FIGURE 5

**STORM WATER CONVEYANCE
MAP (DISTAL)**

LAMPROS STEEL
9040 N BURGARD WAY
PORTLAND, OREGON

Table 1 - Summary of Ground Water Elevations

Monitoring Well Designation	Installation Date	Date	OWRD Well Tag No.	Completion Depth of Boring (feet bgs)	Screened Interval (feet bgs)	Surveyed Top of Casing (TOC) Elevation (feet) ¹	Depth to Water (DTW) (feet below TOC)	Relative Elevation (feet)	
MW01	1/20/2025	3/26/2025	L155858	15	5 - 15	27.301	4.36	22.94	
		6/18/2025					5.70	21.60	
		9/25/2025					6.65	20.65	
		12/11/2025					5.50	21.80	
		Minimum						4.36	20.65
		Maximum						6.65	22.94
MW02	1/20/2025	3/26/2025	L155859	15	5 - 15	27.491	5.48	22.01	
		6/18/2025					6.46	21.03	
		9/25/2025					7.26	20.23	
		12/11/2025					6.09	21.40	
		Minimum						5.48	20.23
		Maximum						7.26	22.01
MW03	1/21/2025	3/26/2025	L155860	15	5 - 15	29.814	7.99	21.82	
		6/18/2025					7.73	22.08	
		9/25/2025					9.61	20.20	
		12/11/2025					9.09	20.72	
		Minimum						7.73	20.20
		Maximum						9.61	22.08
						Minimum	4.36	20.20	
						Maximum	9.61	22.94	

¹ Survey conducted on 01/27/2025 by Axis Mapping and Survey Co. relative to NAD 1983

TOC = top of casing

Table 2. Summary of 1200-Z Industrial Storm Water Permit Storm Water Compliance Data (MP001)

Sample Location	Monitoring Location 001					Monitoring Location 001			Monitoring Location 001				Geometric Mean (2025-2026)	1200-Z Benchmark	Sample Frequency
Date Sampled	10/23/2021	11/12/2021	3/14/2022	4/4/2022	4/27/2022	11/4/2022	12/8/2022	2/5/2023	10/12/2025	10/26/2025	2/23/2026	4/1/2026			
Storm Water Monitoring Period	2021-2022					2022-2023			2025-2026						
	mg/L (ppm)	mg/L (ppm)	mg/L (ppm)	mg/L (ppm)	mg/L (ppm)	mg/L (ppm)	mg/L (ppm)	mg/L (ppm)	mg/L (ppm)	mg/L (ppm)	mg/L (ppm)	mg/L (ppm)	mg/L (ppm)		
Rainfall Intensity (daily total inches)	0.75	1.79	0.18	0.26	0.26	-	-	0.12	0.22	0.56	0.3	0.49			
General Parameters															
pH	7.01*	6.87*	6.50*	6.67*	7.73*	WAIVER	WAIVER	WAIVER	5.90*	6.68*	6.75*	6.72*	6.50	5.5-9.0	4 x per yr. ea. yr
TSS	9.00	50.0	38	33	28	WAIVER	WAIVER	WAIVER	13	8.8	16	22	14	30	4 x per yr. ea. yr
Metals															
Copper	0.00692	0.0159	0.0111	0.00527	<0.005 (ND)	WAIVER	WAIVER	WAIVER	0.0064	<0.005 (ND)	<0.005 (ND)	0.0088	0.006	0.015	4 x per yr. ea. yr
Lead	0.00656	0.0129	0.00483	0.00253	<0.001 (ND)	WAIVER	WAIVER	WAIVER	0.0011	<0.001 (ND)	0.0014	0.0027	0.001	0.24	4 x per yr. ea. yr
Zinc	0.0480	0.0847	0.104	0.0473	<0.005 (ND)	WAIVER	WAIVER	WAIVER	0.032	0.016	0.043	0.099	0.038	0.24	4 x per yr. ea. yr
Iron	0.669	3.69	3.46	1.12	2.94	0.536	2.27	1.15	0.48	0.096	0.65	1.5	0.46	10	4 x per yr. ea. yr

Shaded concentrations indicates detected
concentration exceeds benchmark value
* pH collected in field

Table 3. Evaluation of Potential Constituents of Interest (Surface Water)

Constituent	Retain as COI? Y/N	Notes/Rationale for Exclusion
VOCs		
Ethylbenzene	N	Subject site has historically been used for storage of lumber and recently for the outdoor storage of metal sheeting. Ethylbenzene was not previously identified as a COI during the SCE investigation and was not detected during previous ground-water sampling events at the Site. Therefore, ethylbenzene is not retained as a COI for SCM performance monitoring.
Naphthalene	Y	
Pesticides		
Aldrin	N	The site is currently completely impervious (combination of asphalt paving and buildings) with the exception of a very narrow strip of landscaping on the north side of the building. Pesticides/herbicides were historically not used since there were very limited landscaped areas to maintain and no crops were grown onsite.
Chlordanes	N	
DDx	N	
DDD	N	
DDE	N	
DDT	N	
Hexachlorobenzene	N	
MCPP	N	Subject site has historically been used for storage of lumber and outdoor storage of metal sheeting. No wood preservation or paper mill activities have been performed on site. The site has not been used for marine antifouling. No cooling water systems have been present on site. Thus, no sources of tributyltin on site have been identified or are likely to exist.
Tributyltin	N	
Metals		
Arsenic	Y	
Chromium	Y	
Copper	Y	
Zinc	Y	
SVOCs		
BEHP	Y	
Pentachlorophenol	N	Subject site has historically been used for storage of lumber and outdoor storage of metal sheeting. No wood preservation or paper mill activities have been performed on site. No sources of pentachlorophenol on site have been identified or are likely to exist.
PCBs	Y	Subject site has historically been used for storage of lumber and outdoor storage of metal sheeting. No historical evidence or sources have been identified indicating PCBs were stored, transported to or from, or otherwise present at the site at any time. However, since PCBs have been detected in site catch basis and at the outfall, ODEQ requested this constituent be retained as a COI.
cPAHs (B(a)P eq)	Y	
Benzo(a)anthracene	Y	
Benzo(a)pyrene	Y	
Benzo(b)fluoranthene	Y	
Benzo(k)fluoranthene	Y	
Chrysene	Y	
Dibenz(a,h)anthracene	Y	
Indeno(1,2,3-c,d)pyrene	Y	
Dioxins/Furans (2,3,7,8-TCDD eq)	Y	Subject site has historically been used for storage of lumber and outdoor storage of metal sheeting. No chemical manufacturing, wood pulp processing, combustion processes have occurred on site. Thus, a source of dioxins/furans on site is unlikely. However, since dioxins/furans have been detected at the outfall, ODEQ requested this constituent be retained as a COI.

Table 4. Evaluation of Potential Constituents of Interest (Ground Water)

Constituent	Retain as COI? Y/N	Notes/Rationale for Exclusion
VOCs		
Benzene	N	Subject site has historically been used for storage of lumber and recently for the outdoor storage of metal sheeting. This VOC was not previously identified as a COI during the SCE investigation and was not detected during previous ground-water sampling events at the Site. Therefore, this VOC is not retained as a COI for ground-water SCE monitoring.
Chlorobenzene	N	
1,1-Dichloroethene	N	
cis-1,2-Dichloroethene	N	
Ethylbenzene	N	
Naphthalene	Y	
Tetrachloroethene	N	Subject site has historically been used for storage of lumber and recently for the outdoor storage of metal sheeting. This VOC was not previously identified as a COI during the SCE investigation and was not detected during previous ground-water sampling events at the Site. Therefore, this VOC is not retained as a COI for ground-water SCE monitoring.
Toluene	N	
Trichloroethene	N	
Vinyl Chloride	N	
Xylenes	N	
Pesticides		
DDx	N	The site is currently completely impervious (combination of asphalt paving and buildings) with the exception of a very narrow strip of landscaping on the north side of the building. Pesticides/herbicides were historically not used since there were very limited landscaped areas to maintain and no crops were grown onsite.
DDD	N	
DDE	N	
DDT	N	
2,4-Dichloropheoxyacetic acid	N	
2,4,5-TP (Silvex)	N	
Metals		
Arsenic	Y	
Cadmium	Y	
Chromium	Y	
Copper	Y	
Lead	Y	
Manganese	Y	
Vanadium	N	Subject site has historically been used for storage of lumber and recently for the outdoor storage of metal sheeting. No steel production activities have occurred on site. Thus, a source of vanadium on site is unlikely.
Zinc	Y	
SVOCs		
Cyanide	N	Subject site has historically been used for storage of lumber and recently for the outdoor storage of metal sheeting. As such, no sources of cyanide on site have been identified or are expected.
Pentachlorophenol	N	Subject site has historically been used for storage of lumber and outdoor storage of metal sheeting. No wood preservation or paper mill activities have been performed on site. No sources of pentachlorophenol on site have been identified or are likely to exist.
Perchlorate	N	Subject site has historically been used for storage of lumber and outdoor storage of metal sheeting. No production of explosives, solid fuel or batteries has been performed on site. No sources of perchlorate on site have been identified or are likely to exist.
PCBs	Y	Subject site has historically been used for storage of lumber and outdoor storage of metal sheeting. No historical evidence or sources have been identified indicating PCBs were stored, transported to or from, or otherwise present at the site at any time. However, since PCBs have been detected in site catch basis and at the outfall, ODEQ requested this constituent be retained as a COI.
cPAHs (B(a)P eq)	Y	
Acenaphthene	Y	
Anthracene	Y	
Benzo(a)anthracene	Y	
Benzo(a)pyrene	Y	
Benzo(b)fluoranthene	Y	
Benzo(g,h,i)perylene	Y	
Benzo(k)fluoranthene	Y	
Chrysene	Y	
Dibenz(a,h)anthracene	Y	
Fluoranthene	Y	
Fluorene	Y	
Indeno(1,2,3-c,d)pyrene	Y	
2-Methylnaphthalene	Y	
Phenanthrene	Y	
Pyrene	Y	
Dioxins/Furans (2,3,7,8-TCDD eq)	Y	Subject site has historically been used for storage of lumber and outdoor storage of metal sheeting. No chemical manufacturing, wood pulp processing, combustion processes have occurred on site. Thus, a source of dioxins/furans on site is unlikely. However, since dioxins/furans have been detected at the outfall, ODEQ requested this constituent be retained as a COI.
1,2,3,4,7,8-HxCDF		
1,2,3,7,8-PeCDD		
2,3,4,7,8-PeCDF		
2,3,7,8-TCDF		
2,3,7,8-TCDD		
Total Petroleum Hydrocarbons		
Aliphatic Hydrocarbons C10-C12	Y	

Table 5 - Summary of Analytical Data, Storm Water

Sample ID		ML001-SW-221122	ML001-SW-221209	ML001-SW-230113	ML001-SW-230323	ML001-SW-241111	ML001-SW-250312	ML001-260106	ML001-260213	Maximum Storm Water Concentration (Last Four Sample Events)	Frequency of Detection (Last Four Sample Events)	Portland Harbor ROD Table 17 Cleanup Level (Surface Water)	ODEQ Appendix E Curve "Knee" Range	Background Concentrations (Surface Water - metals)	COI exceeds Portland Harbor Cleanup Level (Surface Water)?	COI exceeds ODEQ Appendix E Low End of "Knee" Range?
Date Sampled		11/22/22	12/9/22	1/13/23	3/23/23	11/11/24	3/12/25	1/6/26	2/13/26						TRUE OR Y FALSE OR N	
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW							
Location		ML001														
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)		µg/L (ppb)	µg/L (ppb)	µg/L (ppb)		
Metals																
Arsenic	c, nv	32.0	0.330	0.814	14.0	<1 (ND)	<1 (ND)	1.0	2.7	2.7	50%	0.018	3-6	2	Y	N
Chromium (total)	nc, nv	<1 (ND)	2.08	3.42	<1 (ND)	<1 (ND)	<5 (ND)	1.7	3.2	3.2	50%	100	6-15	1	N	N
Copper	nc, nv	<5 (ND)	8.5	14.7	2.28	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	0%	2.74	40-150	9	(Y)	N
Zinc	nc, nv	<5 (ND)	67.4	90.7	3.37	21	37	24	27	37	100%	36.5	350-1000	1	N-RND	N
Semivolatile Organic Constituents																
Bis(2-ethylhexyl)phthalate	c, nv	<1.6 (ND)	<3.2 (ND)	<1.6 (ND)	<1.6 (ND)	---	<4 (ND)	<1 (ND)	---	<4 (ND)	0%	0.2	3-8	NE	(Y)	N
Polychlorinated biphenyls (Total PCBs)	c, v	1.44E-03	1.09E-02	9.62E-03	7.01E-04	---	---	---	---	1.09E-02	100%	6.40E-06	0.14-0.6	NE	Y	N
Polycyclic Aromatic Hydrocarbons																
Acenaphthene	nc, v	<0.01 (ND)	<0.02 (ND)	<0.01 (ND)	<0.01 (ND)	<0.02 (ND)	--	<0.01 (ND)	0.021	<0.021 (ND)	25%	0.2	--	NE	N	--
Acenaphthylene		<0.01 (ND)	<0.02 (ND)	--	<0.01 (ND)	<0.02 (ND)	--	<0.01 (ND)	<0.01 (ND)	<0.02 (ND)	0%	0.2	--	NE	N	--
Anthracene	nc, v	<0.01 (ND)	<0.02 (ND)	<0.1 (ND)	<0.01 (ND)	<0.02 (ND)	--	<0.01 (ND)	0.014	0.014	25%	0.2	--	NE	N	--
Benzo[a]anthracene	c, nv	<0.01 (ND)	<0.02 (ND)	<0.017 (ND)	<0.01 (ND)	<0.02 (ND)	<0.02 (ND)	<0.01 (ND)	<0.01 (ND)	<0.02 (ND)	0%	0.0012	0.5-3	NE	N	N
Benzo[a]pyrene	c, nv	<0.01 (ND)	0.025	0.04 J	<0.01 (ND)	<0.02 (ND)	<0.02 (ND)	<0.01 (ND)	<0.01 (ND)	<0.02 (ND)	0%	0.00012		NE	(Y)	
Benzo[b]fluoranthene	c, nv	<0.01 (ND)	<0.048 (ND)	0.071 J	<0.01 (ND)	<0.02 (ND)	<0.02 (ND)	<0.01 (ND)	<0.01 (ND)	<0.02 (ND)	0%	0.0012		NE	(Y)	
Benzo[k]fluoranthene	c, nv	<0.01 (ND)	<0.02 (ND)	0.026 J	<0.01 (ND)	<0.02 (ND)	<0.02 (ND)	<0.01 (ND)	<0.01 (ND)	<0.02 (ND)	0%	0.0013		NE	(Y)	
Chrysene	c, nv	<0.01 (ND)	0.042	0.058	<0.01 (ND)	<0.02 (ND)	<0.02 (ND)	<0.01 (ND)	<0.01 (ND)	<0.02 (ND)	0%	0.0013		NE	(Y)	
Dibenz[a,h]anthracene	c, nv	<0.01 (ND)	<0.02 (ND)	<0.01 (ND) J	<0.01 (ND)	<0.02 (ND)	<0.02 (ND)	<0.01 (ND)	<0.01 (ND)	<0.02 (ND)	0%	0.00012		NE	(Y)	
Indeno[1,2,3-cd]pyrene	c, nv	<0.01 (ND)	0.022	0.025 J	<0.01 (ND)	<0.02 (ND)	<0.02 (ND)	<0.01 (ND)	<0.01 (ND)	<0.02 (ND)	0%	0.0012		NE	(Y)	
Naphthalene	c, v	<0.1 (ND)	<0.2 (ND)	<0.1 (ND)	<0.1 (ND)	<0.2 (ND)	<0.2 (ND)	<0.1 (ND)	<0.1 (ND)	<0.2 (ND)	0%	12		NE	N	
Total PAHs		0.342	0.255	0.474 J	0.311	<0.2 (ND)	<0.2 (ND)	<0.1 (ND)	0.035	0.035	25%	--		NE	--	
Benzo[a]pyrene (BaP equivalents)	c, nv	<0.01 (ND)	0.027	0.043 J	<0.01 (ND)	<0.02 (ND)	<0.02 (ND)	<0.01 (ND)	<0.01 (ND)	<0.02 (ND)	0%	0.00012		NE	(Y)	
2,3,7,8-TCDD (dioxin) equivalents	c, v	1.1E-07	5.8E-07	6.5E-07	8.2E-08	---	---	---	---	6.5E-07	100%	5.10E-10	2E-6 - 51E-6	NE	Y	N

Notes:
ug/L = micrograms per Liter or parts per billion (ppb).
<# (ND) = not detected at or above the laboratory method reporting limit shown.
NE = not established.
— = not analyzed or not applicable.
c = carcinogenic
nc = noncarcinogenic
v = volatile
nv = nonvolatile
N-RND = does not exceed cleanup level when considering significant digits.
¹ Portland Harbor ROD Table 17 Cleanup Level
(Y) indicates analyte not detected, but detection limit is above screening concentration.
N/A - not applicable
J = indicates the internal standard associated with the analyte is out of control limits; the reported concentration is an estimate.

Table 6 - Summary of Analytical Data, Ground Water (Monitoring Well)

Location ID		MW01				MW02				MW03				Maximum Detected Ground Water Concentration	Maximum Detected Ground Water Concentration (MW01 - Upgradient)	Maximum Detected Ground Water Concentration (MW02 and MW03, Downgradient)	Frequency of Detection	ROD Table 17 Cleanup Levels (Ground Water)	COI exceeds ROD Table 17 Cleanup Levels for Portland Harbor?
Sample ID		MW01-GW-250321	MW01-GW-250618	MW01-GW-250925	MW01-GW-251211	MW02-GW-250326	MW02-GW-250618	MW02-GW-250925	MW02-GW-251211	MW03-GW-250321	MW03-GW-250618	MW03-GW-250925	MW03-GW-251211						
Date Sampled		3/21/2025	6/18/2025	9/25/2025	12/11/2025	3/26/2025	6/18/2025	9/25/2025	12/11/2025	3/21/2025	6/18/2025	9/25/2025	12/11/2025						
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW						
Location		Northwest of site building				South-central end of southern lot				Southwest of southern lot									TRUE OR Y FALSE OR N
Constituent of Interest		Note	µg/L (ppb)				µg/L (ppb)				µg/L (ppb)				µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	
Metals																			
Arsenic	c, nv	0.81	3.2	4.6	4.6	6.7	2.3	3.4	7.5	6.1	8.4	10	8.0	10.0	4.6	10.0	100%	0.018	Y
Cadmium	nc, nv	<0.2 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	<1 (ND)	---	<0.2 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	<1 (ND)	0%	0.094	(Y)
Chromium (III)	nc, nv	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	<1 (ND)	0%	11	N
Copper	nc, nv	<5 (ND)	<5 (ND)	<5 (ND)	---	<5 (ND)	<5 (ND)	<5 (ND)	---	<5 (ND)	<5 (ND)	<5 (ND)	---	<5 (ND)	<5 (ND)	<5 (ND)	0%	2.74	(Y)
Lead	NA, nv	0.43	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	<1 (ND)	---	<0.2 (ND)	<1 (ND)	<1 (ND)	---	0.43	<1 (ND)	<1 (ND)	0%	0.54	N
Manganese	nc, nv	280	240 ve	940	1100	510	540 ve	480	840	660	680 ve	870	880	1100	1100	880	100%	430	Y
Mercury	nc, nv	<0.01 (ND)	<1 (ND)	---	---	<0.01 (ND)	<1 (ND)	---	---	<0.01 (ND)	<1 (ND)	---	---	<1 (ND)	<1 (ND)	<1 (ND)	0%	430	(Y)
Zinc	nc, nv	<5 (ND)	<5 (ND)	<5 (ND)	---	<5 (ND)	<5 (ND)	<5 (ND)	---	<5 (ND)	<5 (ND)	<5 (ND)	---	<5 (ND)	<5 (ND)	<5 (ND)	0%	36.5	N
Semivolatile Organic Constituents																			
Aroclor 1221	c, v	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	0%	---	---
Aroclor 1232	c, v	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	0%	---	---
Aroclor 1016	c, v	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	0%	---	---
Aroclor 1242	c, v	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	0%	---	---
Aroclor 1248	c, v	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	0%	---	---
Aroclor 1254	c, v	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	0%	---	---
Aroclor 1260	c, v	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	0%	---	---
Aroclor 1262	c, v	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	0%	---	---
Aroclor 1268	c, v	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	0%	---	---
Polychlorinated biphenyls (Total PCBs)	c, v	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	0%	0.014	(Y)
Polycyclic Aromatic Hydrocarbons																			
Acenaphthene	nc, v	0.0060	<0.002 (ND) j	<0.002 (ND) j	<0.008 (ND) j	0.002 j	<0.002 (ND) j	<0.002 (ND) j	<0.008 (ND) j	<0.002 (ND) j	<0.002 (ND) j	0.0054	<0.008 (ND) j	0.0060	0.0080	0.0080	25%	23	N
Anthracene	nc, v	0.0086	0.0053	0.0031	<0.01 (ND)	0.0028 j	<0.0025 (ND)	<0.0025 (ND)	<0.01 (ND)	0.0031 j	0.0030	0.0030	<0.01 (ND)	0.0100	0.0100	0.0100	58%	0.73	N
Benzo[a]anthracene	c, v	0.030	0.015	0.0065	<0.015 (ND) j	0.022	<0.005 (ND)	0.0040 j	<0.015 (ND) j	<0.005 (ND)	<0.005 (ND)	<0.0037 (ND) j	<0.015 (ND) j	0.030	0.030	0.022	42%	0.0012	Y
Benzo[a]pyrene	c, nv	0.049	0.018	0.0034	<0.006 (ND) j	0.028	0.0032	0.0048	<0.006 (ND) j	0.0020 j	<0.0015 (ND) j	<0.0015 (ND) j	<0.006 (ND) j	0.049	0.049	0.028	58%	0.00012	Y
Benzo[b]fluoranthene	c, nv	0.060	0.028	0.0050	<0.005 (ND) j	0.032	0.0041	0.0063	<0.005 (ND) j	0.0023 j	0.0013 j	0.0019 j	<0.005 (ND) j	0.060	0.060	0.032	75%	0.0012	Y
Benzo[k]fluoranthene	c, nv	0.020	0.008	0.0016 j	<0.005 (ND) j	0.010	<0.0012 (ND) j	0.0062	<0.005 (ND) j	<0.0012 (ND) j	<0.0012 (ND) j	0.0019 j	<0.005 (ND) j	0.020	0.020	0.010	50%	0.0013	Y
Chrysene	c, nv	0.048	0.024	0.0088	<0.01 (ND)	0.022	<0.0025 (ND)	0.0059	<0.01 (ND)	<0.0025 (ND) j	<0.0025 (ND)	0.0032	<0.01 (ND)	0.048	0.048	0.022	50%	0.0013	Y
Dibenz[a,h]anthracene	c, nv	<0.0045 (ND) j	<0.0037 (ND)	<0.0037 (ND)	<0.015 (ND)	<0.0037 (ND) j	<0.0037 (ND)	0.0075	<0.015 (ND)	<0.0037 (ND) j	<0.0037 (ND) j	<0.0037 (ND)	<0.015 (ND)	0.0075	0.0150	0.0150	8%	0.00012	(Y)
Fluoranthene	nc, nv	0.11	0.064	0.024	0.016	0.038	0.0045	0.0045	<0.015 (ND)	0.012	0.010	0.013	<0.015 (ND)	0.11	0.11	0.04	83%	6.2	N
Fluorene	nc, v	0.011	0.0054	0.0036	<0.008 (ND) j	0.0032 j	<0.002 (ND) j	<0.002 (ND) j	<0.008 (ND) j	0.0036 j	0.0055	0.0060	<0.008 (ND) j	0.011	0.011	0.0080	58%	3.9	N
Indeno[1,2,3-cd]pyrene	c, nv	0.039	0.019	0.0022 j	<0.009 (ND) j	0.022	0.0023 j	0.0083	<0.009 (ND) j	<0.0022 (ND) j	<0.0022 (ND) j	0.0032	<0.009 (ND) j	0.039	0.039	0.022	58%	0.0012	Y
Naphthalene	c, v	<0.022 (ND)	<0.022 (ND)	<0.022 (ND)	<0.09 (ND)	<0.022 (ND)	<0.022 (ND)	<0.022 (ND)	<0.09 (ND)	<0.022 (ND)	<0.022 (ND)	<0.022 (ND)	<0.09 (ND)	<0.09 (ND)	<0.09 (ND)	<0.09 (ND)	0%	12	N
Phenanthrene	c, v	0.090	0.030	<0.01 (ND)	<0.016 (ND)	0.016	0.0059	<0.01 (ND)	<0.016 (ND)	0.027	0.014	<0.01 (ND)	0.016	0.090	0.090	0.027	58%	6.3	N
Benzo(g,h,i)perylene	---	0.046	0.025	<0.0037 (ND)	<0.015 (ND)	0.028	<0.005 (ND)	0.0073	<0.015 (ND)	<0.005 (ND)	<0.005 (ND)	<0.0037 (ND)	<0.015 (ND)	0.046	0.046	0.028	33%	0.4	N
Pyrene	nc, v	0.15	0.082	0.056	0.035	0.12	0.014	0.050	0.15	0.029	0.034	0.058	0.029	0.15	0.15	0.15	100%	10	N
cPAHs (BaP eq.)	c, nv	0.063	0.050	0.005	<0.006 (ND) j	0.036	0.004	0.007	<0.006 (ND) j	0.002	0.00013	0.001	<0.006 (ND) j	0.063	0.063	0.036	75%	0.00012	Y
2,3,7,8-TCDD (dioxin) equivalents	c, v	1.88E-09	4.26E-09	<9.6E-10 (ND)	---	9.21E-09 B	1.36E-09	1.34E-08	---	5.22E-08	4.281E-08 EMPC	9.18E-08 EMPC	---	9.18E-08	4.26E-09	9.18E-08	100%	---	---
Total Petroleum Hydrocarbons																			
Aliphatic Hydrocarbons (C10-C12)	nc, v	<39.7 (ND)	<39.8 (ND)	<39.4 (ND)	---	<39.4 (ND)	<39.1 (ND)	<38.5 (ND)	---	<39.4 (ND)	<39.4 (ND)	<39.0 (ND)	---	<39.7 (ND)	<39.8 (ND)	<39.4 (ND)	0%	2.6	(Y)

Notes:
ug/L = micrograms per Liter or parts per billion (ppb).
<# (ND) = not detected at or above the laboratory method reporting limit shown.
NE = not established.
--- = not analyzed or not applicable.
c = carcinogenic
nc = noncarcinogenic
v = volatile
nv = nonvolatile
Bolded/Shaded concentrations exceed both Portland Harbor SLV and ROD Table 17 Cleanup Level.
(Y) indicates analyte not detected, but detection limit is above screening concentration.
j = indicates the analyte concentration is reported between the method detection limit and the lowest calibration point; the reported concentration is an estimate.
ROD = Record of Decision Table 17 Cleanup Levels

Table 7 - Summary of Analytical Data for Dioxins and Furans, Storm Water

Sample ID	ML001-SW-221122		ML001-SW-221209		ML001-SW-230113		ML001-SW-230323		Toxicity Equivalence Quotient (TEQ)
Date Sampled	11/22/22	TEQ	12/9/22	TEQ	1/13/23	TEQ	3/23/23	TEQ	
Depth Sampled (feet)	---		---		---		---		
Sampled By	ENW		ENW		ENW		ENW		
Location	ML001 (southwest of fueling area)								
Constituent of Interest	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	
Dioxins/Furans									
2,3,7,8-TCDD eq	---	0.110	---	0.583	---	0.649	---	0.0816	1
2,3,7,8-TCDD	<1.31 (ND)	<1.31 (ND)	<0.79 (ND)	<0.79 (ND)	<1.62 (ND)	<1.62 (ND)	<1.18 (ND)	<1.18 (ND)	1
1,2,3,7,8-PeCDD	<3.41 (ND)	<3.41 (ND)	<1.53 (ND)	<1.53 (ND)	<1.4 (ND)	<1.4 (ND)	<1.54 (ND)	<1.54 (ND)	1
1,2,3,4,7,8-HxCDD	<3.1 (ND)	<0.31 (ND)	<2.52 (ND)	<0.252 (ND)	<1.97 (ND)	<0.197 (ND)	<2.18 (ND)	<0.218 (ND)	0.1
1,2,3,6,7,8-HxCDD	<3.2 (ND)	<0.32 (ND)	<2.25 (ND)	<0.225 (ND)	<2.23 (ND)	<0.223 (ND)	<2.46 (ND)	<0.246 (ND)	0.1
1,2,3,7,8,9-HxCDD	<2.94 (ND)	<0.294 (ND)	<2.33 (ND)	<0.233 (ND)	<2.27 (ND)	<0.227 (ND)	<2.58 (ND)	<0.258 (ND)	0.1
1,2,3,4,6,7,8-HpCDD	10.4 J	0.104 J	35.9	0.359	44.2	0.442	7.98 EMPC	0.0798 EMPC	0.01
OCDD	19.00 J	0.0057 J	316	0.0948	398	0.1194	5.84 J	0.001752 J	0.0003
2,3,7,8-TCDF	<1.33 (ND)	<0.133 (ND)	<0.875 (ND)	<0.0875 (ND)	<0.381 (ND)	<0.0381 (ND)	<0.589 (ND)	<0.0589 (ND)	0.1
1,2,3,7,8-PeCDF	<2.4 (ND)	<0.072 (ND)	<1.46 (ND)	<0.0438 (ND)	<1.08 (ND)	<0.0324 (ND)	<1.07 (ND)	<0.0321 (ND)	0.03
2,3,4,7,8-PeCDF	<2.74 (ND)	<0.822 (ND)	<1.53 (ND)	<0.459 (ND)	<1.06 (ND)	<0.318 (ND)	<0.975 (ND)	<0.2925 (ND)	0.3
1,2,3,4,7,8-HxCDF	<2.56 (ND)	<0.256 (ND)	<1.76 (ND)	<0.176 (ND)	<0.978 (ND)	<0.0978 (ND)	<0.983 (ND)	<0.0983 (ND)	0.1
1,2,3,6,7,8-HxCDF	<2.7 (ND)	<0.27 (ND)	<1.87 (ND)	<0.187 (ND)	<1.06 (ND)	<0.106 (ND)	<0.944 (ND)	<0.0944 (ND)	0.1
2,3,4,6,7,8-HxCDF	<2.74 (ND)	<0.274 (ND)	<1.89 (ND)	<0.189 (ND)	<1.34 (ND)	<0.134 (ND)	<1.09 (ND)	<0.109 (ND)	0.1
1,2,3,7,8,9-HxCDF	<3.77 (ND)	<0.377 (ND)	<2.69 (ND)	<0.269 (ND)	<1.58 (ND)	<0.158 (ND)	<1.48 (ND)	<0.148 (ND)	0.1
1,2,3,4,6,7,8-HpCDF	<2.83 (ND)	<0.0283 (ND)	11.8 J	0.118 J	7.98 EMPC	0.0798 EMPC	<1.15 (ND)	<0.0115 (ND)	0.01
1,2,3,4,7,8,9-HpCDF	<5.15 (ND)	<0.0515 (ND)	<2.24 (ND)	<0.0224 (ND)	<4.12 (ND)	<0.0412 (ND)	<1.76 (ND)	<0.0176 (ND)	0.01
OCDF	<8.43 (ND)	<0.002529 (ND)	36.7 J	0.011 J	26.5	0.00795	<4.88 (ND)	<0.001464 (ND)	0.0003

Notes:
ng/L = nanograms per Liter or parts per quadrillion (ppq).

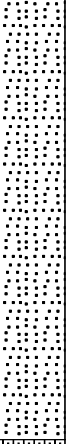
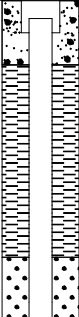
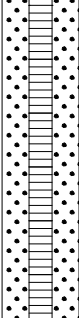
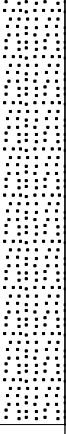
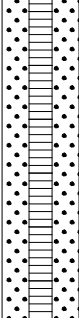
<# (ND) = not detected at or above the laboratory detection or estimated detection limit shown.

J = indicates the internal standard associated with the analyte is out of control limits; the EMPC = estimated maximum possible concentration
yellow highlighted cells indicate congener of concern at outfall according to ODEQ

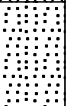
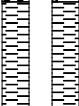
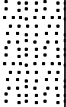
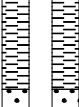
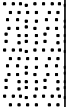
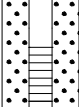
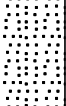
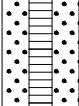
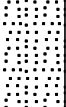
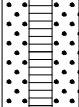
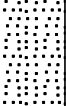
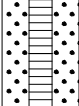
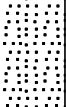
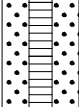
Appendix A

Boring Logs and FSDS Precipitation Hydrographs

DRILL LOG		PROJECT Lampros Steel		PROJECT NO. 1355-19001-05		BORING NO. MW01	
SITE 9040 N. Burgard Way, Portland, Oregon		BEGUN 01-20-25		COMPLETED 01-20-25		HOLE SIZE 4"	
COORDINATES		DEPTH GROUND WATER	DATE SL 01-20-25	STATIC LEVEL 4.92		FIRST WATER	
DRILLER AEC		CORE RECOVERY (%)		# SAMPLES		# CORE BOXES	
DRILL MAKE AND MODEL 6011 DT		LOGGED BY: Jordan Morris				DEPTH BOTTOM OF HOLE 15	

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./ Completion		
0			Asphalt and base gravel.						
			10YR 3/1 gray brown medium SAND, wet, loose, no mica observed, quartz-rich, red lithics.			70		0.0	
3			Sharp color shift to 10YR 4/4 orange-brown at 3.5 feet.					0.0	
			Saturated at 5 feet.					0.0	
6								0.0	
			10YR 3/1 gray fine SAND and SILT, saturated, soft, micaceous, wood debris.			100		0.0	
9			10YR 3/1 gray medium SAND, saturated, extremely loose, no mica observed, quartz-rich, red lithics.					0.0	
12			2" lens of wood debris at 12 feet.			100		0.0	
15			End of boring at 15 feet.					0.0	
18									
21									

DRILL LOG		PROJECT Lampros Steel		PROJECT NO. 1355-19001-05		BORING NO. MW02	
SITE 9040 N. Burgard Way, Portland, Oregon		BEGUN 01-20-25		COMPLETED 01-20-25		HOLE SIZE 4"	
COORDINATES		DEPTH GROUND WATER	DATE SL 01-20-25	STATIC LEVEL 6'		FIRST WATER	
DRILLER AEC		CORE RECOVERY (%)		# SAMPLES		# CORE BOXES	
DRILL MAKE AND MODEL 6011 DT		LOGGED BY: Jordan Morris				DEPTH BOTTOM OF HOLE 15	

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./ Completion		
0			Asphalt and coarse fill gravel with silt and fine sand, dry, dense, no mica.						
3			10YR 4/4 orange-brown medium SAND with trace fine to medium rounded GRAVEL, moist, extremely loose, no mica observed, quartz-rich, red lithics.			80		0.0	
6			Lens of fine GRAVEL at 5 feet. Saturated at 5 feet.			80		0.0	
9			Color sharply grades to 10YR 3/1 gray at 8.5.			100		0.0	
12								0.0	
15			End of boring at 15 feet.					0.0	
18									
21									

DRILL LOG		PROJECT Lampros Steel		PROJECT NO. 1355-19001-05		BORING NO. MW03	
SITE 9040 N. Burgard Way, Portland, Oregon		BEGUN 01-21-25		COMPLETED 01-21-25		HOLE SIZE 4"	
COORDINATES		DEPTH GROUND WATER	DATE SL 01-21-25	STATIC LEVEL 8.38		FIRST WATER	
DRILLER AEC		CORE RECOVERY (%)		# SAMPLES		# CORE BOXES	
DRILL MAKE AND MODEL 6011 DT		LOGGED BY: Jordan Morris				DEPTH BOTTOM OF HOLE 15	

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./ Completion		
0			Asphalt and round to angular coarse base gravel.						
			10YR 4/4 orange-brown medium SAND, wet, loose, no mica observed, quartz-rich.						
			10YR 5/1 coarse subround GRAVEL, dry, extremely dense, no mica observed.						
			10YR 3/1 gray SILT and fine SAND, wet, medium soft, micaceous.			70		0.0	
3			10YR 3/1 medium SAND, wet, loose, no mica observed, quartz-rich, gray lithics.					0.0	
								0.2	
6			Color grades to 10YR 4/4 by 5. 5 feet. Lens of concrete at 6 feet (extremely difficult drilling as a result).			60		0.0	
								0.0	
9			Saturated at 9 feet.					0.0	
								0.0	
12						100		0.0	
			Color grades to 10YR 3/1 gray by 13 feet.					0.0	
15			End of boring at 15 feet.					0.0	
									
18									
									
21									



PROJECT: Phase II ESA	BORING ID: B-1	
LOCATION: 9040 N Burgard Way, Portland, OR	WELL ID: NA	
DRILLING CONTRACTOR: AEC	NORTHING:	EASTING:
DRILLING EQUIPMENT: Geoprobe 7822	SURFACE ELEV. (NAVD88): Not measured	TOC ELEVATION: NA
DRILLING METHOD: Direct-Push	TOTAL DEPTH: 15	DEPTH TO WATER: 5.5
SAMPLING METHOD: 2.25-Inch Single Tube Sampler	DATE STARTED: 2/15/19	DATE COMPLETED: 2/15/19

Elev. (feet)	USCS	Graphic Log	Description	Driven/Rec. (ft.)	Headspace Vapor (ppm)	Soil Sample	Notes
0	GP		Gray GRAVEL with silt, loose to medium dense, moist	5.0/5.0	<5		B-1(1-3)
2	SP		Reddish brown SAND with silt, loose to medium dense, moist		<5		
4	SP		Gray SAND with silt, loose to medium dense, moist		<5		
6	SP		Reddish brown SAND with silt, loose to medium dense, moist	5.0/5.0	<5		B-1(6-8)
8	SP		Reddish brown SAND with silt, loose to medium dense, wet		<5		
10					<5		
12				5.0/5.0	<5		
14					<5		

NOTES: Bottom of boring at 15 feet bgs. Groundwater sample B-1 collected from temporary wellpoint with screen between 5 and 15 feet bgs.



PROJECT: Phase II ESA	BORING ID: B-2	
LOCATION: 9040 N Burgard Way, Portland, OR	WELL ID: NA	
DRILLING CONTRACTOR: AEC	NORTHING:	EASTING:
DRILLING EQUIPMENT: Geoprobe 7822	SURFACE ELEV. (NAVD88): Not measured	TOC ELEVATION: NA
DRILLING METHOD: Direct-Push	TOTAL DEPTH: 15	DEPTH TO WATER:
SAMPLING METHOD: 2.25-Inch Single Tube Sampler	DATE STARTED: 2/15/19	DATE COMPLETED: 2/15/19

Elev. (feet)	USCS	Graphic Log	Description	Driven/Rec. (ft.)	Headspace Vapor (ppm)	Soil Sample	Notes
0	GP		Gray GRAVEL with silt, loose to medium dense, moist	5.0/5.0	<5	☒	B-2(2-3)
2	SW		Tan and brown SAND with silt, medium dense, moist		<5		
4	ML		Gray SILT, moist	5.0/5.0	<5	☒	B-2(4-5)
	SP		Gray SAND with silt, medium dense, moist		<5		
6	GP		Brown GRAVEL with silt, medium dense, moist	5.0/5.0	<5		
	SP		Reddish brown SAND with silt, loose to medium dense, moist		<5		
8	ML		Gray SILT with some organics, stiff, moist	5.0/5.0	<5		
			Gray SAND with silt, medium dense, moist		<5		
10	SW			5.0/5.0	<5		
12					<5		
14	ML		Gray SILT with some organics, stiff, moist		<5		

NOTES: Bottom of boring at 15 feet bgs.



	PROJECT: Phase II ESA	BORING ID: B-3	
	LOCATION: 9040 N Burgard Way, Portland, OR	WELL ID: NA	
	DRILLING CONTRACTOR: AEC	NORTHING:	EASTING:
	DRILLING EQUIPMENT: Geoprobe 7822	SURFACE ELEV. (NAVD88): Not measured	TOC ELEVATION: NA
	DRILLING METHOD: Direct-Push	TOTAL DEPTH: 15	DEPTH TO WATER: 8.31
LOGGED BY: LW	SAMPLING METHOD: 2.25-Inch Single Tube Sampler	DATE STARTED: 2/15/19	DATE COMPLETED: 2/15/19

Elev. (feet)	USCS	Graphic Log	Description	Driven/Rec. (ft.)	Headspace Vapor (ppm)	Soil Sample	Notes
0	GP		Gray GRAVEL with silt, loose to medium dense, moist	5.0/5.0	<5	☒	B-3(1-2)
2	SP		Tan and brown SAND with silt, medium dense, moist		<5		
4	SP		Gray SAND with silt, medium dense, moist		<5		
6	SW		Reddish brown SAND with silt, loose, moist	5.0/5.0	<5		
8	SW		Reddish brown SAND with silt, loose, wet		<5		
10	ML		Gray SILT, stiff, wet		<5		
12	SP		Gray SAND, medium grain, moist	5.0/5.0	<5	☒	B-3(14-15)
14					<5		

NOTES: Bottom of boring at 15 feet bgs. Groundwater sample B-3 collected from temporary wellpoint with screen between 5 and 15 feet bgs.



PROJECT: Phase II ESA	BORING ID: B-4	
LOCATION: 9040 N Burgard Way, Portland, OR	WELL ID: NA	
DRILLING CONTRACTOR: AEC	NORTHING:	EASTING:
DRILLING EQUIPMENT: Geoprobe 7822	SURFACE ELEV. (NAVD88): Not measured	TOC ELEVATION: NA
DRILLING METHOD: Direct-Push	TOTAL DEPTH: 20	DEPTH TO WATER:
SAMPLING METHOD: 2.25-Inch Single Tube Sampler	DATE STARTED: 2/14/19	DATE COMPLETED: 2/14/19

Elev. (feet)	USCS	Graphic Log	Description	Driven/Rec. (ft.)	Headspace Vapor (ppm)	Soil Sample	Notes
0	GW		Gray GRAVEL with silt, medium dense, moist		<5		
2			Brown SAND with Silt, loose, moist	5.0/5.0	<5	☒	
4	SP				<5		
6					<5		
8	CL		Reddish brown SAND with silt, loose, moist	5.0/5.0	<5		
	SP		Gray SAND, medium dense, wet		<5	☒	
10	ML		Gray SILT with sand, medium stiff, wet		<5		
12	CL		Gray SAND with silt, loose, wet	5.0/5.0	<5		
14					<5		
16					<5		
18				5.0/5.0	<5		
20					<5		

NOTES: Bottom of boring at 20 feet bgs.



PROJECT: Phase II ESA	BORING ID: B-5	
LOCATION: 9040 N Burgard Way, Portland, OR	WELL ID: NA	
DRILLING CONTRACTOR: AEC	NORTHING:	EASTING:
DRILLING EQUIPMENT: Geoprobe 7822	SURFACE ELEV. (NAVD88): Not measured	TOC ELEVATION: NA
DRILLING METHOD: Direct-Push	TOTAL DEPTH: 15	DEPTH TO WATER: 6.6
SAMPLING METHOD: 2.25-Inch Single Tube Sampler	DATE STARTED: 2/15/19	DATE COMPLETED: 2/15/19

Elev. (feet)	USCS	Graphic Log	Description	Driven/Rec. (ft.)	Headspace Vapor (ppm)	Soil Sample	Notes
0	GP		Gray GRAVEL with silt, loose to medium dense, moist		<5		
2	SP		Gray SAND with silt, medium dense, moist	5.0/5.0	<5	☒	B-5(2-3)
4	SW		Reddish brown SAND with silt, loose to medium dense, moist		<5		
6					<5		
8			Gray SAND with silt, medium dense, moist	5.0/5.0	<5	☒	B-5(7-9)
10	SP				<5		
12				5.0/3.0	<5		
14					<5		

NOTES: Bottom of boring at 15 feet bgs. Groundwater sample B-5 collected from temporary wellpoint with screen between 5 and 15 feet bgs.



PROJECT: Phase II ESA	BORING ID: B-6	
LOCATION: 9040 N Burgard Way, Portland, OR	WELL ID: NA	
DRILLING CONTRACTOR: AEC	NORTHING:	EASTING:
DRILLING EQUIPMENT: Geoprobe 7822	SURFACE ELEV. (NAVD88): Not measured	TOC ELEVATION: NA
DRILLING METHOD: Direct-Push	TOTAL DEPTH: 20	DEPTH TO WATER: 7.1
SAMPLING METHOD: 2.25-Inch Single Tube Sampler	DATE STARTED: 2/14/19	DATE COMPLETED: 2/14/19

Elev. (feet)	USCS	Graphic Log	Description	Driven/Rec. (ft.)	Headspace Vapor (ppm)	Soil Sample	Notes
0	GP		Gray GRAVEL with silt, medium dense, moist				
2	SP		Gray SAND with silt, medium grain, medium dense, moist				
4							
6	SP		Reddish brown SAND with silt, medium grain, loose to medium dense, moist				
8							
10							
12	SP		Gray silty SAND, loose, moist				
14							
16							
18	SP		Increasing silt				
20							

NOTES: Bottom of boring at 20 feet bgs. Groundwater sample B-6 collected from temporary wellpoint with screen between 10 and 20 feet bgs.



PROJECT: Phase II ESA	BORING ID: B-7	
LOCATION: 9040 N Burgard Way, Portland, OR	WELL ID: NA	
DRILLING CONTRACTOR: AEC	NORTHING:	EASTING:
DRILLING EQUIPMENT: Geoprobe 7822	SURFACE ELEV. (NAVD88): Not measured	TOC ELEVATION: NA
DRILLING METHOD: Direct-Push	TOTAL DEPTH: 20	DEPTH TO WATER: 15.95
SAMPLING METHOD: 2.25-Inch Single Tube Sampler	DATE STARTED: 2/14/19	DATE COMPLETED: 2/14/19

Elev. (feet)	USCS	Graphic Log	Description	Driven/Rec. (ft.)	Headspace Vapor (ppm)	Soil Sample	Notes
0	ML		Brown and tan silty SAND, medium dense to loose, moist		<5		B-7(1-2)
2	ML		Brown and tan SILT, medium dense to loose, moist			☒	
			Reddish brown silty SAND, loose, moist	5.0/5.0	<5		
4					<5		
6					<5		
8	SP			5.0/5.0	<5		
10					<5		
12					<5		
14	SP		Gray silty SAND, medium dense, wet	5.0/5.0	<5	☒	B-7(13-15)
16					<5		
18	ML		Gray SILT with sand, medium stiff, wet	5.0/5.0	<5		
20					<5		

NOTES: Bottom of boring at 20 feet bgs. Groundwater sample B-7 collected from temporary wellpoint with screen between 10 and 20 feet bgs.



PROJECT: Phase II ESA	BORING ID: B-8	
LOCATION: 9040 N Burgard Way, Portland, OR	WELL ID: NA	
DRILLING CONTRACTOR: AEC	NORTHING:	EASTING:
DRILLING EQUIPMENT: Geoprobe 7822	SURFACE ELEV. (NAVD88): Not measured	TOC ELEVATION: NA
DRILLING METHOD: Direct-Push	TOTAL DEPTH: 20	DEPTH TO WATER: 6.6
SAMPLING METHOD: 2.25-Inch Single Tube Sampler	DATE STARTED: 2/14/19	DATE COMPLETED: 2/14/19

Elev. (feet)	USCS	Graphic Log	Description	Driven/Rec. (ft.)	Headspace Vapor (ppm)	Soil Sample	Notes
0	GP		Asphalt concrete underlain by gray crushed rock				
2			Reddish brown SAND with silt, loose, moist.	5.0/5.0	<5	☒	B-8(2-3)
4	SW				<5		
6					<5		
8				5.0/5.0	<5		
10	SP		Gray SAND with silt, medium dense, wet		<5		
12	SP		Increasing silt	5.0/5.0	<5	☒	B-8(12-13)
14			Increasing sand		<5		
16	SP				<5		
18				5.0/5.0	<5		
20					<5		

NOTES: Bottom of boring at 20 feet bgs. Groundwater sample B-8 collected from temporary wellpoint with screen between 10 and 20 feet bgs.



PROJECT: Phase II ESA	BORING ID:		B-9
	LOCATION:		9040 N Burgard Way, Portland, OR
	DRILLING CONTRACTOR:		AEC
	DRILLING EQUIPMENT:		Geoprobe 7822
	DRILLING METHOD:		Direct-Push
LOGGED BY:	SAMPLING METHOD:		2.25-Inch Single Tube Sampler
	DATE STARTED:		2/14/19
LW		DATE COMPLETED:	
		2/14/19	

Elev. (feet)	USCS	Graphic Log	Description	Driven/Rec. (ft.)	Headspace Vapor (ppm)	Soil Sample	Notes
0	GP		Gray GRAVEL with silt, medium dense, moist	5.0/5.0	<5	☒	B-9(1-2)
2	SW		Reddish brown SAND with silt, medium dense, moist		<5		
4	SW		Reddish brown SAND with silt, medium dense, moist. Some glass debris encountered.		<5		
	SW		Reddish brown SAND with silt, medium dense, moist		<5		
6	SW		Reddish brown SAND with silt, medium dense, moist. Some wood debris and concrete debris.	1.0/1.0	<5		

NOTES: Boring encountered refusal at 6 feet below ground surface



PROJECT: Phase II ESA	BORING ID: B-10	
LOCATION: 9040 N Burgard Way, Portland, OR	WELL ID: NA	
DRILLING CONTRACTOR: AEC	NORTHING:	EASTING:
DRILLING EQUIPMENT: Geoprobe 7822	SURFACE ELEV. (NAVD88): Not measured	TOC ELEVATION: NA
DRILLING METHOD: Direct-Push	TOTAL DEPTH: 20	DEPTH TO WATER: 17.6
SAMPLING METHOD: 2.25-Inch Single Tube Sampler	DATE STARTED: 2/15/19	DATE COMPLETED: 2/15/19

Elev. (feet)	USCS	Graphic Log	Description	Driven/Rec. (ft.)	Headspace Vapor (ppm)	Soil Sample	Notes
0	GP		Asphalt concrete underlain by gray crushed rock	5.0/5.0	<5	☒	B-10(1-3)
2	SP		Tan SAND with silt, fine to medium grain, loose to medium dense, moist.		<5		
4					<5		
6	SP		Brown SAND with silt, fine to medium grain, medium dense, wet	5.0/5.0	<5	☒	B-10(1-3)
8					<5		
10					<5		
12	SP		Tan silty SAND, fine to medium grain, medium dense, wet	5.0/5.0	<5	☒	B-10(1-3)
14					<5		
16					<5		
18	SP		Brown silty SAND, fine to medium grain, moist	5.0/5.0	<5	☒	B-10(18-20)
20					<5		

NOTES: Bottom of boring at 20 feet bgs. Groundwater sample B-10 collected from temporary wellpoint with screen between 10 and 20 feet bgs.

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NUMBER:

Date:

Monitoring Well ID:

Start Time:

21-43

WELL PURGING INFORMATION

[illegible]

Total Purged: 3.4

7/4th 2025

0.5

Well casing (in. diam):

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.17 gal / foot; 5/8" = 0.02 gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

☐ Duplicate☐ Lab QA/QC☐ Equipment Blank☐ None☐ Grundfos Pump☒ Peristaltic Pump☐ Bladder Pump

☐ Dual Valve

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
	FEB	N/A	1L	3		
		HCl	1L	1	MW01-GW-250921	10:10
		HNO ₃	250mL	1		

Method of Transportation of samples: FedEx Courier

All samples were immediately placed into a cooler and packed with ice or "blue Ice"

☒ Yes☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME:

PROJECT NUMBER:

Event:

Date:

Field Personnel:

Monitoring Well ID:

Weather Conditions:

Start Time:

DTW (prior to purging):

WELL PURGING INFORMATION

[illegible]

Total Purged: 20 L

Tubing:

Purge Pumping Rate (approx. L/m):

Well casing (in. diam):

Decontamination method:

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.17 gal / foot; 5/8" = 0.02 gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample:

☐ Duplicate☐ Lab QA/QC☐ Equipment Blank☐ None

Sampling Method:

☐ Grundfos Pump

☒ Peristaltic Pump

☐ Bladder Pump☐ Dual Value

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
	F&B	N/A	1L	3		
		HCl	1L	1	MN03-GW-250321	11:05
		HNO ₃	250ml	1	MN ED-GW-250321	2:00

Method of Transportation of samples:

FedEx

Courier

All samples were immediately placed into a cooler and packed with ice or "blue ice"

☒ Yes☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

GROUNDWATER SAMPLING FIELD FORM

PROJECT NUMBER: 1355-19001-02

Date: 06-18-25

Well ID: 1401

Start Time: 8:51

		WELL PURGING INFORMATION	
--	--	--------------------------	--

Total Purged:

Well casing (in. diam): 2.5

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.163 gal / foot; 1" = 0.0408 gal/foot Tubing: 3/8" = 0.0026 gal/foot; 1/4" = 0.0016 gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

SAMPLE INFORMATION

Method of Transportation of samples:	FedEx	Courier
--------------------------------------	-------	---------

All samples were immediately placed into a cooler and packed with ice or "blue Ice"

☒ Yes ☐ No

Field Observations/Notes of sampling event:

Date: 06.12.21

GROUNDWATER SAMPLING FIELD FORM

PROJECT NUMBER:

Date: 06-18-25

Well ID: mh02

Start Time: 9:51

DTW (prior to purging): 6.46

WELL PURGING INFORMATION

[illegible]

Total Purged: 3.6

Tubing: $\frac{1}{4}$ " LDPE

Purge Pumping Rate (approx. L/m): 0.15

Well casing (in. diam): 2

Decontamination method:

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.163 gal / foot; 1" = 0.0408 gal/foot	Tubing: 3/8" = 0.0026 gal/foot; 1/4" = 0.0016 gal/foot
--	--

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
		N/A	1L	5	MUC2-GW-250G18 MUC2-GW-250G18-FF	10:50
		HNO ₃	200mL	2		

Method of Transportation of samples: FedEx Courier

All samples were immediately placed into a cooler and packed with ice or "blue Ice"

☒ Yes ☐ No

Field Observations/Notes of sampling event: Turbidity is bouncy

Signature of Field Personnel:

Date: 06-18-25

GROUNDWATER SAMPLING FIELD FORM

PROJECT NUMBER: 1355-19001-02

Date: 06-18-75

Joe & Jordan

Well ID: MW02

Overcast

Start Time: 1405

7.13

[illegible]

Total Purged: 3 (3)

Tubing: 1/4" LDBE

Purge Pumping Rate (approx. L/m): 0.15

Well casing (in. diam): 24

Decontamination method:

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.163 gal / foot; 1" = 0.0408 gal/foot

Tubing: 3/8" = 0.0026 gal/foot; 1/4" = 0.0016 gal/foot

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
		N/A	1L	5		
		HNO ₃	250ml	2	MW03-GW-250018 MW03-GW-250018.FF	11-55

Method of Transportation of samples: FedEx Courier

All samples were immediately placed into a cooler and packed with ice or "blue Ice"

☒ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

Date: 06-18-25

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NUMBER: 1355-19001-02

Date: 09-25-25

Monitoring Well ID: MW01

Start Time: 12:44

WELL PURGING INFORMATION

Total Purged:

Well casing (in. diam): 2

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.17 gal / foot; 5/8" = 0.02 gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump ☐ Dual Valve

SAMPLE INFORMATION

Method of Transportation of samples: FedEx Courier

All samples were immediately placed into a cooler and packed with ice or "blue Ice"

☒ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

09.75.28

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: Lampros Steel 9040 Burgard Way Portland, OR

PROJECT NUMBER: 1355-19001-02

Event: Additional Site Characterization

Date: 09.25.25

Field Personnel:

Monitoring Well ID:

Weather Conditions:

Start Time:

DTW (prior to purging):

WELL PURGING INFORMATION

[illegible]

Total Purged: 3.04

Tubing: 1/4" LDPE

Purge Pumping Rate (approx. L/m):

Well casing (in. diam):

Decontamination method:

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.17 gal / foot; 5/8" = 0.02 gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:	
--	--

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump ☐ Dual Valve

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
	F+B	UNP	1 Liter	5		
	"	HNO3	250 ml	1		
	"					
	"				MW02-GW-250925	12:30
	"				MW02-GW-250925-PF	12:30

Method of Transportation of samples:	FedEx	Courier
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All samples were immediately placed into a cooler and packed with ice or "blue Ice"

☒ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

09-25-25

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NUMBER: 1355-19001-02

Date: 09-25-25

Todd Morish

Monitoring Well ID: MW03

Humus, 6% of

Start Time: 10:45

9.410

WELL PURGING INFORMATION

[illegible]

Total Purged:

1/4" LDPE

Well casing (in. diam): 2

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.17 gal / foot; 5/8" = 0.02 gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

☐ Duplicate☐ Lab QA/QC☐ Equipment Blank☐ None☐ Grundfos Pump☒ Peristaltic Pump☐ Bladder Pump☐ Dual Values

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
	F+B	UNP	1 Liter	5		
	"	HNO3	250 ml	1	MW03-GW-290925	11:40
	"					
	"	HNO3 PF			MW03-GW-290925-PF	11:40
	"					

FedEx

Courier

☒ Yes☐ No

Field Observations/Notes of sampling event:

James R.

27-25-25

EVREN Northwest

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: Lampros Steel 9040 Burgard Way Portland, ORPROJECT NUMBER: 1355-19001-02Event: Additional Site CharacterizationDate: 12/11/25Field Personnel: Allen KellerMonitoring Well ID: MW01Weather Conditions: 55°F cloudyStart Time: 918DTW (prior to purging): 5.50'

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (L/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), ±0.1%	ORP (mV), ±10 mV	Turbidity (NTU), ±10%	Total Quantity Purged (gallons/liters)
919	water entering		not in flow cell →		Clear				
921	5.50	.1	16.97	0.476	0.92	6.58	-100	123	.3
925	5.50	.1	17.00	0.467	0.67	6.69	-108	118	.7
929	5.51	.1	16.85	0.452	0.54	6.75	-112	104	1.1
933	5.51	.1	16.91	0.448	0.50	6.76	-112	84.7	1.5
937	5.51	.1	16.92	0.440	0.45	6.78	-113	57.3	1.9
941	5.51	.1	16.94	0.428	0.43	6.78	-112	60.5	2.3
945	5.51	.1	16.93	0.414	0.41	6.78	-111	58.7	2.7
949	5.51	.1	16.93	0.405	0.40	6.78	-112	53.9	3.1
953	5.51	.1	16.94	0.397	0.39	6.78	-111	51.4	3.5
957	5.51	.1	16.95	0.396	0.39	6.78	-111	51.1	3.9
Start Sampling									
Total Purged: <u>3.9L</u>									

Tubing: 1/4" LDPEPurge Pumping Rate (approx. L/min): .1Well casing (in. diam): 2

Decontamination method:

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.17 gal / foot; 5/8" = 0.02 gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ NoneSampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump ☐ Dual Valve

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
Select PAHs, PCBs (as Aroclors),	F+B	UNP	1 Liter	2	MW01-GW-251211	1000
Total Select Metals	"	HNO3	250 ml	1	" "	" "
Aliphatic Hydrocarbons (C10-C12)	"	UNP	1 Liter	1	" "	" "
Dioxins and Furans	"	UNP	1 Liter	2	" "	" "

Method of Transportation of samples: FedEx ☒ Courier

All samples were immediately placed into a cooler and packed with ice or "blue ice"

☒ Yes ☐ NoField Observations/Notes of sampling event: opened at 842Signature of Field Personnel: Allen Keller

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: Lampros Steel 9040 Burgard Way Portland, OR

PROJECT NUMBER: **1355-19001-02**

Event: Additional Site Characterization

Date: 12/1/25

Field Personnel: Allen Heller

Monitoring Well ID: M4/02

Weather Conditions: 52° F cloudy

Start Time: 11/05

DTW (prior to purging): 6.09'

WELL PURGING INFORMATION

[illegible]

Total Purged: 3.56

Tubing: 1/4" LDPE

Purge Pumping Rate (approx. L/m):

Well casing (in. diam): 2

Decontamination method:

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.17 gal / foot; 5/8" = 0.02 gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump ☐ Dual Valve

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
Select PAHs, PCBs (as Aroclors),	F+B	UNP	1 Liter	2	MW02-GW-251211	1148
Total Select Metals	"	HNO3	250 ml	1	//	//
Aliphatic Hydrocarbons (C10-C12)	"	UNP	1 Liter	1	//	//
Dioxins and Furans	"	UNP	1 Liter	2	//	//
					//	//

Method of Transportation of samples:	FedEx	<u>Courier</u>
--------------------------------------	-------	----------------

All samples were immediately placed into a cooler and packed with ice or "blue ice"

☒ Yes ☐ No

Field Observations/Notes of sampling event: *Openid at 647*

Signature of Field Personnel: *Alan Hill*

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: Lampros Steel 9040 Burgard Way Portland, OR

PROJECT NUMBER: **1355-19001-02**

Event: Additional Site Characterization

Date: 12/11/75

Field Personnel: Allen Hall

Monitoring Well ID: MW03

Weather Conditions: 55° Cloudy

Start Time: 1244

DTW (prior to purging): 9.09

WELL PURGING INFORMATION

[illegible]

Total Purged: 4.56

Tubing: 1/4" LDPE

Purge Pumping Rate (approx. L/m): 15

Well casing (in. diam): 2

Decontamination method:

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.17 gal / foot; 5/8" = 0.02 gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☒ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump ☐ Dual

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
Select PAHs, PCBs (as Aroclors),	F+B	UNP	1 Liter	2	MW03-GW-251211	1318
Total Select Metals	"	HNO3	250 ml	1	//	// //
Aliphatic Hydrocarbons (C10-C12)	"	UNP	1 Liter	1	//	// //
Dioxins and Furans	"	UNP	1 Liter	2	//	// //
					//	// //

Method of Transportation of samples: FedEx Courier

All samples were immediately placed into a cooler and packed with ice or "blue ice"

☒ Yes ☐ No

Field Observations/Notes of sampling event: opened at 858. field duplicate collected.

Signature of Field Personnel: *gln* *Hgn*

Appendix B

Select OWRD Well Logs

MULT
658

Well Record

STATE WELL NO. 1N/1W-1 M
COUNTY Multnomah
APPLICATION NO. _____

6711 N. E. 58th Ave.
Vancouver, Wash. 98661

Phone: 694-6242
835-3370

HANSEN DRILLING CO., Inc.

LOG

Name Northwest Natural Gas Co.
Location N. Jersey & Weyerhaeuser
Address (St Johns)

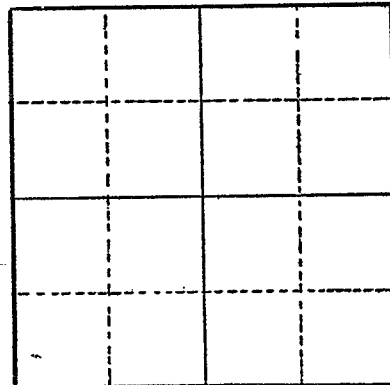
Date Started 2-4-65 Date Finished 2-15-65

DESCRIPTION:

- (a) Well Depth _____ ft. Diameter _____
(b) Depth from ground surface to water level before
pumping _____ ft. Bailer tested _____ GPM
(c) Drawdown of water level is _____ feet.
(pumping level minus static water level)
(d) Casing - screen - perforation - shoe - etc.
20' of 10" casing cemented
2½ yds. gravel

Time:

11 hours....move in & rig up
10 hours....rig down, clean up
38 hours....drilling time
12 hours....anodes, coke, graphite,
pole & gravel
24 hours....circulate & pull rod



Section _____

Log on Ground Information

Material	Depth
top soil	0- 2
brown clay and sand	2- 12
grey sand	12- 50
sand and boulders	50- 55
sand, gravel & boulders	55-268
blue green clay	268-276
green & red rock--fractured	276-288
blue clay	288-310
blue sand and clay in layers 3-10 feet thick	310-405

H.P. _____

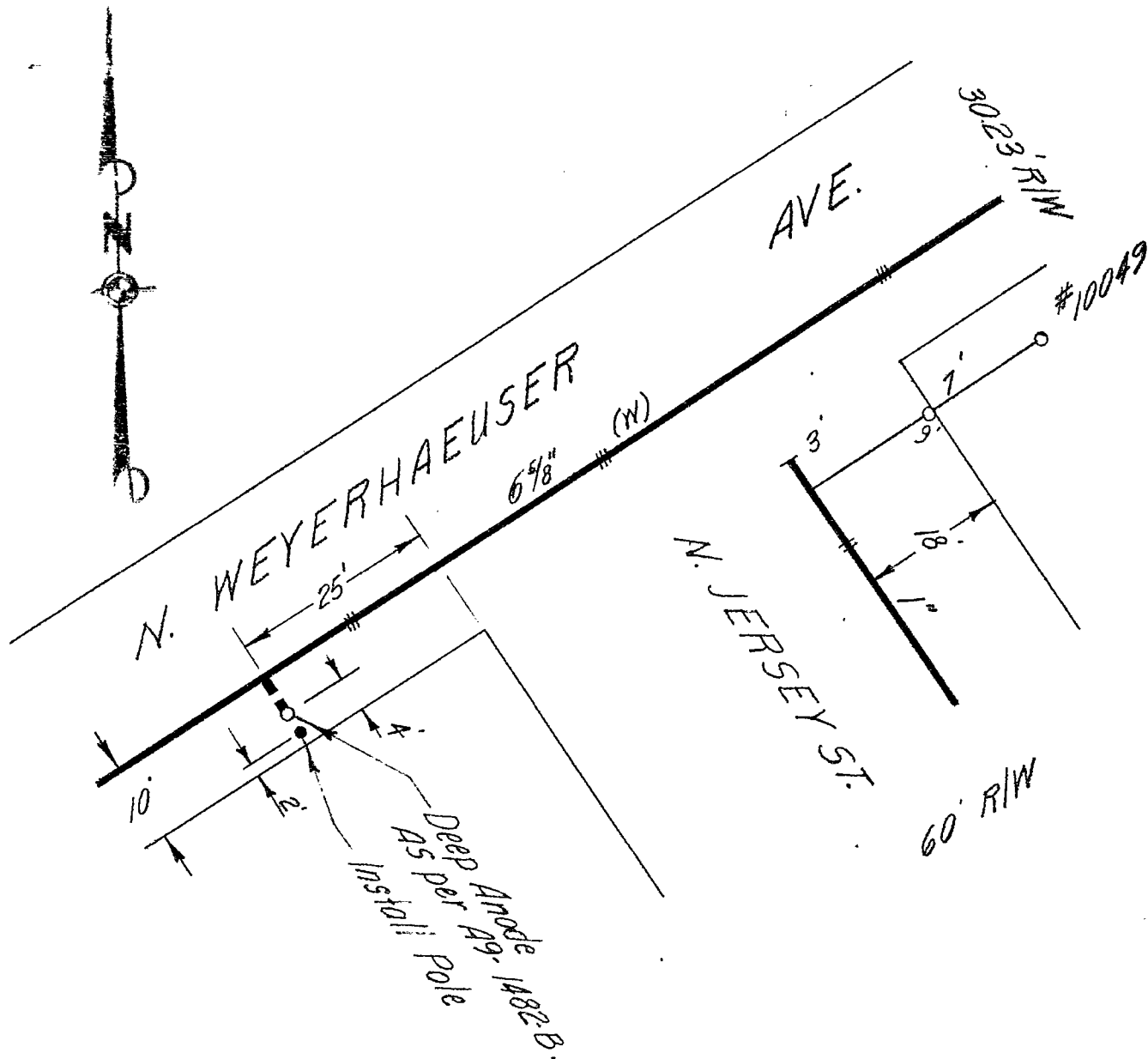
G.P.M. _____

G.P.M. _____

°F. _____, 19 _____

Analysis _____ Aquifer Test _____

IN/IW-1M
MULTNOMAH



R.115

P.S. 1921

APP. <i>14</i>	DATE <i>2-4-64</i>	NORTHWEST NATURAL GAS COMPANY Deep Anode Loc. N. Weyerhaeuser Ave & Jersey St. Portland, Ore.	DR. BY <i>15</i>	DATE <i>6-2-64</i>
APP. <i>15</i>	DATE <i>7-6-64</i>		SCALE <i>1"=20'</i>	
APP.	DATE		DWG. NO. <i>A9-3092</i>	

SP*46866-690

SP*46866-690

MULTI WATER WELL REPORT

STATE OF OREGON

(Please type or print)

STATE ENGINEER
SALEM, OREGON

State Well No.

State Permit No.

001824

RECEIVED

JAN 29 1973

2N/1W-35

(1) OWNER:

Name Beall Pipe & Tank Corp.
Address 12005 N. Burgard Rd.
Portland, Oregon

(2) TYPE OF WORK (check):

New Well ☐ Deepening ☒ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☒ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED:

Threaded ☐ Welded ☒
8" Diam. from 0 ft. to 216 ft. Gage .250
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

PERFORATIONS:

Perforated? ☒ Yes ☐ No.
Type of perforator used Mills Knife

Size of perforations 1/8 in. by 3 in.
72 perforations from 195 ft. to 201 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:

Well screen installed? ☒ Yes ☐ No
Manufacturer's Name UOP Johnson
Type 8" Telescoping Stainless Model No. 304
Diam. 8" Slot size 020 Set from 215 ft. to 220 ft.
Diam. 8" Slot size 020 Set from 215 ft. to 220 ft.
self sealing packer on top.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level

Was a pump test made? ☒ Yes ☐ No If yes, by whom?

Yield: 204 gal./min. with 19 ft. drawdown after 1 hrs.
290 " 28 " 1 "
440 " 42 " 1 "

Bailer test gal./min. with ft. drawdown after hrs.

Artesian flow g.p.m.

Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Well seal—Material used Bentonite
Well sealed from land surface to 30 ft.
Diameter of well bore to bottom of seal 12" in.
Diameter of well bore below seal 8 in.
Number of sacks of cement used in well seal 0 sacks
Number of sacks of bentonite used in well seal 5 sacks
Brand name of bentonite International Gel
Number of pounds of bentonite per 100 gallons of water 50 lbs./100 gals.
Was a drive shoe used? ☒ Yes ☐ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County Multnomah Driller's well number
1/4 1/4 Section 35 T. 2N R. 1 W. W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.

Depth at which water was first found 198 ft.
Static level 16 ft. below land surface. Date 1/22/73
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 8"
Depth drilled 250 ft. Depth of completed well 220 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Previously drilled	0	25	
Silty gray clay-soft	25	46	
Fine gray sand	46	64	
Gray silty clay	64	98	
Fine gray sand	98	118	
Gray silty clay	118	129	
Fine gray sand	129	133	
Gray silty clay	133	161	
Fine gray sand	161	174	
Cemented gravel	174	198	
Coarse sand & gravel	198	203	
Fine brown sand	203	209	
Fine black sand	209	212	
Med. fine & coars sand w/some fine gravel	212	221	
Blue silty clay/gravel seams	221	229	
Gray clay (soft)	229	240	
Firm gray-brown clay	240	258	
Soft gray clay	258		

Work started 11/3/72 19 Completed 1/22/73 19

Date well drilling machine moved off of well 1/22/73 19

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] Ray K. Johnson Date 1/24/73 19
(Drilling Machine Operator)

Drilling Machine Operator's License No. 751

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Name A. M. Janssen Drilling Co.

(Person, firm or corporation)

(Type or print)

Address 21075 S. W. Tualatin Valley Hwy. Aloha, Ore.

[Signed] Edward M. Janssen
(Water Well Contractor)

Contractor's License No. 79 Date 1/24/73 19

STATE ENGINEER
Salem, Oregon

MULT

Well Record

STATE WELL NO. 2N/1W-35J(3)
COUNTY Multnomah
APPLICATION NO. G-1390

OWNER: Union Carbide

MAILING
ADDRESS: _____

LOCATION OF WELL: Owner's No. 3

CITY AND
STATE: Portland, Oregon

NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 35 T. 2 N. XX R. 1 W., W.M.

Bearing and distance from section or subdivision

corner 1640' N. & 929' W. from SE cor. of sec. 35

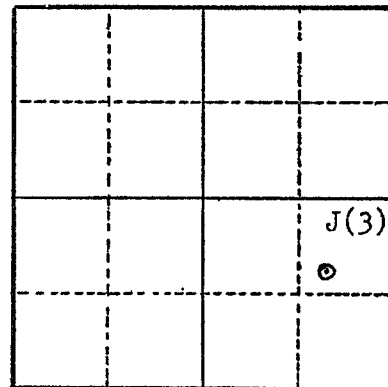
Altitude at well _____

TYPE OF WELL: Drilled Date Constructed 1952

Depth drilled 150' Depth cased 150'

CASING RECORD:

12 inch



Section 35

FINISH:

AQUIFERS:

WATER LEVEL:

PUMPING EQUIPMENT: Type Byron Jackson Subm. H.P. 30
Capacity 700 G.P.M.

WELL TESTS:

Drawdown _____ ft. after _____ hours _____ G.P.M.

Drawdown _____ ft. after _____ hours _____ G.P.M.

USE OF WATER Industrial Temp. _____ °F. _____, 19____

SOURCE OF INFORMATION G-1294

DRILLER or DIGGER _____

ADDITIONAL DATA:

Log X Water Level Measurements _____ Chemical Analysis _____ Aquifer Test _____

REMARKS:

STATE ENGINEER

Salem, Oregon

State Well No. 2N/1W-35 J (3)

County Multnomah

Application No. G - 1390

Well Log

Owner: Union Carbide

Owner's No. # 3

Driller:

Date Drilled 1952

[illegible]

STATE ENGINEER
Salem, Oregon

MULT

001830

Well Record

STATE WELL NO. 2N/1W-35J(2)
COUNTY Multnomah
APPLICATION NO. G-1390

OWNER: Union Carbide

MAILING
ADDRESS:

LOCATION OF WELL: Owner's No. 2

CITY AND
STATE:

Portland, Oregon

NE 1/4 SE 1/4 Sec. 35 T. 2 N. R. 1 W., W.M.

Bearing and distance from section or subdivision

corner 1887' N. & 495' W. from SE cor. of sec. 35

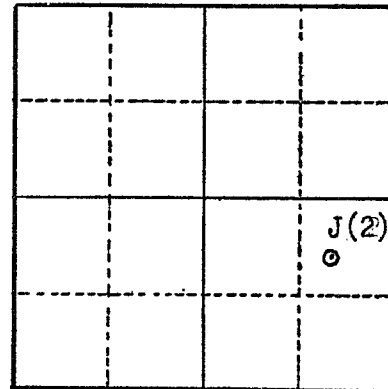
Altitude at well

TYPE OF WELL: Drilled Date Constructed 1941

Depth drilled 154' Depth cased 154'

CASING RECORD:

12 inch



Section 35

FINISH:

AQUIFERS:

Gravel

WATER LEVEL:

PUMPING EQUIPMENT: Type Byron Jackson Subm. H.P. 30
Capacity 700 G.P.M.

WELL TESTS:

Drawdown ft. after hours G.P.M.

Drawdown ft. after hours G.P.M.

USE OF WATER Industrial Temp. °F. 19

SOURCE OF INFORMATION G-1294

DRILLER or DIGGER

ADDITIONAL DATA:

Log X Water Level Measurements Chemical Analysis Aquifer Test

REMARKS:

STATE ENGINEER
Salem, Oregon

State Well No. 2N/LW-35 J (2)
County- Multnomah
Application No. G - 1390

Well Log

Owner: Union Carbide Owner's No. # 2

Driller: _____ Date Drilled: 1941 _____

[illegible]

STATE ENGINEER
Salem, Oregon

MULT
001831

Well Record

STATE WELL NO. 2N/1W-35J(1)
COUNTY Multnomah
APPLICATION NO. G- 1390

OWNER: Union Carbide

MAILING
ADDRESS: _____

LOCATION OF WELL: Owner's No. 1

CITY AND
STATE: _____

Portland, Oregon

NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 35 T. 2 N. XX R. 1 W. W.M.

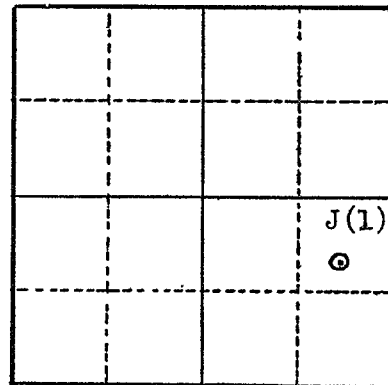
Bearing and distance from section or subdivision

corner 1758' N. & 768' W. from SE cor. of sec. 35

Altitude at well _____

TYPE OF WELL: Drilled Date Constructed 1941

Depth drilled 152' Depth cased 152'



Section 35

CASING RECORD:

12 inch

FINISH:

AQUIFERS:

Gravel

WATER LEVEL:

PUMPING EQUIPMENT: Type Byron Jackson turbine (subm.?) H.P. 30
Capacity 700 G.P.M.

WELL TESTS:

Drawdown _____ ft. after _____ hours _____ G.P.M.

Drawdown _____ ft. after _____ hours _____ G.P.M.

USE OF WATER Industrial Temp. _____ °F. _____, 19____

SOURCE OF INFORMATION G- 1294

DRILLER or DIGGER _____

ADDITIONAL DATA:

Log X Water Level Measurements _____ Chemical Analysis _____ Aquifer Test _____

REMARKS:

STATE ENGINEER
Salem, Oregon

State Well No. 2N/1W-35 J (1)

County Multnomah

Application No. G * 1390

Well Log

Owner: Union Carbide Owner's No. # 1

Driller: _____ Date Drilled 1941

[illegible]

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.785)

MULT

1854

Skyles Drilling, Inc.
1169 Molalla Avenue
Oregon City, Oregon 97045
656-2683

RECEIVED

Start Card #0035

2N/1W-36bc

APR 14 1988

(1) OWNER:

Name Port of Portland
Address P.O. Box 3529
City Portland State Oregon Zip 97208

Well Number: 02

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable
☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☐ Industrial ☒ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☒ Depth of Completed Well 173 ft.
Explosives used Yes ☐ No ☒ Type _____ Amount _____

HOLE			SEAL			Amount sacks or pounds
From	To	Material	From	To	Material	
10"	0	18	Gran. Bent.	0	18	12 sacks
6"	18	173				

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☒ Other Granular Bentonite placed dry

Backfill placed from _____ ft. to _____ ft. Material _____

Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	+1	163	.250	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:	5"	159	163	.188	☒	☐	☒	☐
					☐	☐	☐	☐

Location of shoe(s) 163'

(7) PERFORATIONS/SCREENS:

☐ Perforations Method _____
☒ Screens Type wire wound Material stainless

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
163	173	.010			Tele.	☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
40		150	1 hr.
35		140	1/2 hr.
30		120	1/2 hr.
23	56°	110	1/2 hr.

Temperature of water _____ Depth Artesian Flow Found _____

Was a water analysis done? ☒ Yes By whom Driller

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other _____

Depth of strata: _____

(9) LOCATION OF WELL by legal description:

County Multnomah, Oregon Longitude _____
Township 2 North Nor S, Range 1 West E or W, WM.
Section 36 S.W. 1/4 N.W. 1/4 Rivergate Indust
Tax Lot _____ Lot _____ Block 15 Subdivision District
Street Address of Well (or nearest address) 12610 N. Simmons Rd.
Portland, Oregon

(10) STATIC WATER LEVEL:

24 ft. below land surface. Date 4-8-88
Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found		58'	
From	To	Estimated Flow Rate	SWL
58	60	15 gpm	
133	173	40 gpm	24'

(12) WELL LOG:

Ground elevation _____

Material	From	To	SWL
Sand brown medium	0	18	
Sand gray medium	18	24	
Sand gray mucky	24	58	
Sand gray medium	58	60	
Sand gray soupy	60	76	
Sand brown soupy	76	105	
Sand brown fine	105	133	
Sand and Gravel	133	173	24'

Date started 4-5-88 Completed 4-11-88

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number _____

Signed _____ Date _____

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 553

Signed Mark D. Skyles Date Apr. 12, 1988

NO 0035
RECEIVED

"START CARD"
NOTICE OF BEGINNING OF WELL CONSTRUCTION
(as required by ORS 537.762)

APR 06 1988

WATER RESOURCES DEPT.

SALEM, OREGON

This form must be completed, signed by both the owner (or authorized agent) and constructor, and the original delivered to the Water Resources Department prior to commencement of construction, alteration or abandonment of each well.

Owner's Name and Mailing Address Part of Portland
P.O. Box 3529
Portland, OR 97208

Proposed Commencement Date 4-5-88

Proposed Well Depth 180 Diameter 6
and Use:

- ☐ Domestic ☐ Community ☐ Industrial ☒ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

Proposed Well Location: County Multnomah

Township 2N (N or S) Range 1W (E or W) Section 3C

At least 2
of these
must be
provided

1. SW 1/4 of NW 1/4 of above section
2. street address of well location _____
3. tax lot number of well location _____
4. attach approved map with location identified.
(see reverse of this form for approved maps)

We hereby certify that we have read the back of this form, and that to the best of our knowledge the information provided herein is accurate and the well is being properly located from septic tanks and septic drain fields.

x William D. Mayo
Owner's Signature
Properties Mgo
Title
4-5-88
Date

x Marvin D. Shugh
Bonded Water Well Constructor
License No. 553
Company Skyles Drilling Inc

Note: This is not a Water Right application. The owner is responsible for obtaining a Water Right through the Water Resources Department if required.

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

RECEIVED

APR 5 1993

MULT
3429

(START CARD) # 52061

2N/1W/35E

(1) OWNER: WATER RESOURCES DEPT
Name Oregon Hydrocarbon Inc.
Address 9333 N. Harbourgate
City Portland State OR. Zip 97283

(2) TYPE OF WORK:
☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD:
☒ Rotary Air ☐ Rotary Mud ☐ Cable
☐ Other

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☒ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 200 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE			SEAL			Amount
Diameter	From	To	Material	From	To	sacks or pounds
10	0	49	cement	0	49	15 sack
6	49	200				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other

Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:
Diameter From To Gauge Steel Plastic Welded Threaded
Casing: 6 +1 200 1/4 ☒ ☐ ☒ ☐
Liner:

Final location of shoe(s) 200

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian
Yield gal/min Drawdown Drill stem at Time
75 160 200 1 hr.

Temperature of Water 57 Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Mult. Latitude Longitude
Township 2 N or S. Range 1 E or W. WM.
Section 35 SE 1/4 NW 1/4
Tax Lot Lot Block Subdivision
Street Address of Well (or nearest address) same as above

(10) STATIC WATER LEVEL:
20 ft. below land surface. Date 3/17/93
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 195

From	To	Estimated Flow Rate	SWL
195	200	20 x 75	20

(12) WELL LOG:
Ground elevation

Material	From	To	SWL
clay/sand brown	0	49	
sand/clay wood gray	49	170	
sand	170	195	
gravel/sand gray	195	200	20

Date started 3/15/93 Completed 3/17/93

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

Signed WWC Number
Date

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
Signed Rodney C. Eub WWC Number 663
Date 4/1/93

RECEIVED

**STATE OF OREGON
GEOTECHNICAL HOLE REPORT**
(as required by OAR 690-240-035)

JUN - 3 1996

MULT
51321

PAGE 1 of 2

WATER RESOURCES DEPT.

(1) OWNER/PROJECT:

Hole Number **SALEM, OREGON**

Name **Oregon Steel Mills/Norton Corrosion**
Address **22327 - 89th Ave**
City **Woodinville** State **WA** Zip **98072**

(2) TYPE OF WORK

☒ New ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) CONSTRUCTION:

☐ Rotary Air ☐ Hand Auger ☐ Hollow Stem Auger
☒ Rotary Mud ☐ Cable Tool ☐ Push Probe ☐ Other

(4) TYPE OF HOLE:

☐ Uncased Temporary ☐ Cased Permanent
☐ Uncased Permanent ☐ Slope Stability ☒ Other

(5) USE OF HOLE:

Cathodic Protection

(6) BORE HOLE CONSTRUCTION:

Special Construction approval ☐ Yes ☒ No Depth of Completed Hole **243 ft**

HOLE			SEAL			
Diameter	From	To	Material	From	To	Sacks or pounds
14-3/4"	0	25	Cement	0	25	13 sks
8"	3	81	Cement	3	81	18 sks

Backfill placed from _____ ft. to _____ ft. Material _____
Filter Pack placed from _____ ft. to _____ ft. Size of pack _____

(7) CASING/SCREEN:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	10"	-3	25	.250	☒	☐	☒	☐
	8"	+3	61	.250	☒	☐	☒	☐
	8"	81	176	.250	☒	☐	☒	☐
Screen:					☐	☐	☐	☐
					☐	☐	☐	☐
Slot size								

(8) WELL TEST:

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian
Permeability _____ Yield _____ GPM _____
Conductivity _____ PH _____
Temperature of water _____ °F/C Depth artesian flow found _____ ft.
Was water analysis done? ☐ Yes ☐ No
By whom? _____
Depth of strata analyzed. From _____ ft. to _____ ft.
Remarks: _____

(9) LOCATION OF HOLE by legal description:

County **Multnomah** Latitude _____ Longitude _____
Township **2N** N or S Range **1W** E or W. WM. _____
Section **35** **NE** 1/4 **SW** 1/4
Tax Lot _____ Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) _____
Oregon Steel Mills, Portland

Map with location identified must be attached

(10) STATIC WATER LEVEL:

_____ ft. below land surface. Date _____
Artesian pressure _____ lb. per square inch. Date _____

(11) SUBSURFACE LOG:

Ground Elevation _____

Material Description	From	To	SWL
Grey sand	0	36	
Sandy grey clay	36	48	
Sandy clay layers	48	62	
Grey sand little gravel	62	82	
Sand thin clay layers	82	87	
Fine cement, sand loose layers	87	101	
Loose sand - cemented layers	101	124	
Semi cemented sand thin clay layers	124	138	Cont'd

Date Started **5-14-96**

Date Completed **5-23-96**

(12) ABANDONMENT LOG:

Material Description	From	To	Sacks or Pounds

Date started _____

Date Completed _____

Professional Certification

(to be signed by a licensed water supply or monitoring well constructor, or registered geologist or civil engineer).

I accept responsibility for the construction, alteration, or abandonment work performed on during the construction dates reported above. All work performed during this time is in compliance with Oregon geotechnical hole construction standards. This report is true to the best of my knowledge and belief.

License or Registration Number **WWC 1446**
Signed **Timothy Jones** Date **5-28-96**
Affiliation _____

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

STATE OF OREGON
GEOTECHNICAL HOLE REPORT
 (as required by OAR 690-240-035)

JUN - 3 1996

PAGE 2 of 2

WATER RESOURCES DEPT.

(1) OWNER/PROJECT: **SALEM, OREGON**
 Hole Number _____
 Name Oregon Steel Mills/Norton Corrosion
 Address 22327 - 89th Ave
 City Woodinville State WA Zip 98072

(2) TYPE OF WORK
☐ New ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) CONSTRUCTION:
☐ Rotary Air ☐ Hand Auger ☐ Hollow Stem Auger
☐ Rotary Mud ☐ Cable Tool ☐ Push Probe ☐ Other

(4) TYPE OF HOLE:
☐ Uncased Temporary ☐ Cased Permanent
☐ Uncased Permanent ☐ Slope Stability ☐ Other

(5) USE OF HOLE:

(6) BORE HOLE CONSTRUCTION:
 Special Construction approval ☐ Yes ☐ No Depth of Completed Hole _____ ft.

HOLE			SEAL			Sacks or pounds
Diameter	From	To	Material	From	To	

Backfill placed from _____ ft. to _____ ft. Material _____
 Filter Pack placed from _____ ft. to _____ ft. Size of pack _____

(7) CASING/SCREEN:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Screen:					☐	☐	☐	☐
					☐	☐	☐	☐
Slot size								

(8) WELL TEST:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian
 Permeability _____ Yield _____ GPM _____
 Conductivity _____ PH _____
 Temperature of water _____ °F/C Depth artesian flow found _____ ft.
 Was water analysis done? ☐ Yes ☐ No
 By whom? _____
 Depth of strata analyzed. From _____ ft. to _____ ft.
 Remarks: _____

(9) LOCATION OF HOLE by legal description:
 County _____ Latitude _____ Longitude _____
 Township _____ N or S Range _____ E or W. WM. _____
 Section _____ 1/4 _____ 1/4 _____
 Tax Lot _____ Lot _____ Block _____ Subdivision _____
 Street Address of Well (or nearest address) _____

Map with location indentified must be attached

(10) STATIC WATER LEVEL:
 _____ ft. below land surface. Date _____
 Artesian pressure _____ lb. per square inch. Date _____

(11) SUBSURFACE LOG:
 Ground Elevation _____
 Continues from page 1

Material Description	From	To	SWL
Loose sand white specks	138	153	
Loose sand green specks	153	158	
Semi Cem. brown sand & wood	158	172	
Hard cem. sand & gravel	172	193	
Semi cem. sand & gravel	193	199	
Hard cem. gravel & sand	199	250	

Date Started 5-14-96 Date Completed 5-23-96

(12) ABANDONMENT LOG:

Material Description	From	To	Sacks or Pounds

Date started _____ Date Completed _____

Professional Certification
 (to be signed by a licensed water supply or monitoring well constructor, or registered geologist or civil engineer).

I accept responsibility for the construction, alteration, or abandonment work performed on during the construction dates reported above. All work performed during this time is in compliance with Oregon geotechnical hole construction standards. This report is true to the best of my knowledge and belief.

License or Registration Number WWC 1446
 Signed Timothy C. Jones Date 5-28-96
Tim Jones
 Affiliation _____

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

STATE OF OREGON
WATER SUPPLY WELL REPORT

(as required by ORS 537.765)

WELL I.D. # L 76757
START CARD # W 160998

Instructions for completing this report are on the last page of this form.

(1) **LAND OWNER** Well Number _____
Name Portland Container
Address 9449 N Burgard Way
City Portland, State Or Zip 97203

(2) **TYPE OF WORK**
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment
(3) **DRILL METHOD:**
☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other _____
(4) **PROPOSED USE:**
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☒ Other Dust control
(5) **BORE HOLE CONSTRUCTION:**
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 189 ft.
Explosives used ☐ Yes ☒ No Type _____ Amount _____

HOLE			SEAL			Sacks or pounds
Diameter	From	To	Material	From	To	
12	0	20	quickgrout/ hole plug 0		20	5 sks. grout 6 sks holeplug

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other _____

Backfill placed from _____ ft. to _____ ft. Material _____
Gravel placed from 168 ft. to 189 ft. Size of gravel 8x12 sand
colorado
(6) **CASING/LINER:**

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:							
	8	+ 4.5	178	.322	☒	☒	☐
					☐	☐	☐
					☐	☐	☐
					☐	☐	☐
Liner:							
					☐	☐	☐
					☐	☐	☐

Drive Shoe used ☐ Inside ☒ Outside ☐ NoneFinal location of shoe(s) 178(7) **PERFORATIONS/SCREENS:**
☐ Perforations Method _____
☒ Screens Type Johnson Material S/S

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
168	174	riser		5"	pipe	☒	☐
174	179	.025		5"	pipe	☐	☐
179	189	.035		5"	pipe	☐	☐
						☐	☐

(8) **WELL TESTS: Minimum testing time is 1 hour**

Yield gal/min	Drawdown	Drill stem at	Time
50 - 75		40'	1 hr.
125		60'	
175		80'	

Temperature of water 53° Depth Artesian Flow Found _____Was a water analysis done? ☐ Yes By whom _____Did any strata contain water not suitable for intended use? ☐ Too little☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other _____

Depth of strata: _____

(9) **LOCATION OF WELL by legal description:**
County Multnomah Latitude _____ Longitude _____
Township 2 N N or S Range 1 W E or W. WM.
Section 35 NE 1/4 SE 1/4
Tax Lot 300 Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) 9449 N Burgard Way
Portland, Or 97203
(10) **STATIC WATER LEVEL:**
21 ft. below land surface. Date 8-25-07
Artesian pressure _____ lb. per square inch Date _____
(11) **WATER BEARING ZONES:**Depth at which water was first found 120

From	To	Estimated Flow Rate	SWL
120	167	50	21
167	174	100	21
174	183	150 - 200	21

(12) **WELL LOG:**

Ground Elevation _____

Material	From	To	SWL
Sand & gravel	0	1	
Course sand brown	1	10	
Course sand grey	10	21	
Silty sand w/clay seams	21	67	
silty sand grey, water	67	174	21
sand & gravel grey, water	174	183	21
Sand, less gravel, water	183	189	

RECEIVED**SEP 07 2007****WATER RESOURCES DEPT
SALEM, OREGON**Date started 8-22-07 Completed 8-25-07(unbonded) **Water Well Constructor Certification:**
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief. Matt Golec

Signed Matt Golec WWC Number 1757
Date 8/30/07
(bonded) **Water Well Constructor Certification:**

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

Signed Don Aspes WWC Number 1445
Date 8/30/07

STATE OF OREGON
GEOTECHNICAL HOLE REPORT
 (as required by OAR 690-240-0035)

11/11/2022

(1) OWNER/PROJECT Hole Number B2PROJECT NAME/NBR: PORTLAND OR 10 19
 First Name _____ Last Name _____
 Company PORT PORTLAND
 Address 7200 NE AIRPORT WAY
 City PORTLAND State OR Zip 97218
(2) TYPE OF WORK ☒ New ☐ Deepening ☒ Abandonment
☐ Alteration (repair/recondition)**(3) CONSTRUCTION**
☐ Rotary Air ☐ Hand Auger ☐ Hollow stem auger
☒ Rotary Mud ☐ Cable ☐ Push Probe
☐ Other _____
(4) TYPE OF HOLE:
☒ Uncased Temporary ☐ Cased Permanent
☐ Uncased Permanent ☐ Slope Stability
☐ Other _____
 Other: _____
(5) USE OF HOLE

GEOTECHNICAL SOIL

(6) BORE HOLE CONSTRUCTION Special Standard ☐ (Attach copy)Depth of Completed Hole 190.00 ft.

BORE HOLE			SEAL			sacks/	
Dia	From	To	Material	From	To	Amt	lbs
3.87	0	190	Bentonite Chips	0	10	1	S
			Bentonite Grout	10	190	4	S

 Backfill placed from _____ ft. to _____ ft. Material _____
 Filter pack from _____ ft. to _____ ft. Material _____ Size _____
(7) CASING/SCREEN

Casing	Screen	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
☐	☐		☐				☐	☐	☐	☐
☐	☐		☐				☐	☐	☐	☐
☐	☐		☐				☐	☐	☐	☐
☐	☐		☐				☐	☐	☐	☐
☐	☐		☐				☐	☐	☐	☐

(8) WELL TESTS
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian
 Yield gal/min Drawdown Drill stem/Pump depth Duration(hr)

Temperature _____ °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer _____

 Water quality concerns? ☐ Yes (describe below) TDS amount _____
 From To Description Amount Units

(9) LOCATION OF HOLE (legal description)
 County MULTNOMAH Twp 2.00 N N/S Range 1.00 W E/W WM
 Sec 35 SE 1/4 of the SW 1/4 Tax Lot 500
 Tax Map Number _____ Lot _____
 Lat _____ " or 45.60613056 DMS or DD
 Long _____ " or -122.77830278 DMS or DD
☐ Street address of hole ☒ Nearest address

LOMBARD ST

(10) STATIC WATER LEVEL

Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening			
Completed Well			

 Flowing Artesian? ☐
 WATER BEARING ZONES Depth water was first found

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(11) SUBSURFACE LOG Ground Elevation

Material	From	To
Gravel fill	0	8
brown sand	8	20
grey sand	20	33
med grey black sand w silt bed	33	174
hand cobbles boulder	174	188

Date Started 10/21/2022 Completed 10/24/2022**(12) ABANDONMENT LOG:**

Material	From	To	Amt	sacks/
Bentonite Chips	0	10	1	S
Bentonite Grout	10	190	4	S

Date Started 10/24/2022 Completed 10/24/2022
Professional Certification (to be signed by an Oregon licensed water or monitoring well constructor, Oregon registered geologist or professional engineer).

I accept responsibility for the construction, deepening, alteration, or abandonment work performed during the construction dates reported above. All work performed during this time is in compliance with Oregon geotechnical hole construction standards. This report is true to the best of my knowledge and belief.

License/Registration Number 1772 Date 11/11/2022
 First Name WILLIAM Last Name WRIGHT
 Affiliation WESTERN STATES

GEOTECHNICAL HOLE REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 139146

11/11/2022

Map of Hole



STATE OF OREGON
GEOTECHNICAL HOLE REPORT
 (as required by OAR 690-240-0035)

11/11/2022

(1) OWNER/PROJECT Hole Number B3PROJECT NAME/NBR: PORTLAND OR 10 19

First Name _____ Last Name _____
 Company PORT PORTLAND
 Address 7200 NE AIRPORT WAY
 City PORTLAND State OR Zip 97218

(2) TYPE OF WORK ☒ New ☐ Deepening ☒ Abandonment
☐ Alteration (repair/recondition)**(3) CONSTRUCTION**

☐ Rotary Air ☐ Hand Auger ☐ Hollow stem auger
☒ Rotary Mud ☐ Cable ☐ Push Probe
☐ Other _____

(4) TYPE OF HOLE:

☒ Uncased Temporary ☐ Cased Permanent
☐ Uncased Permanent ☐ Slope Stability
☐ Other _____
 Other: _____

(5) USE OF HOLE

GEOTECHNICAL SOIL

(6) BORE HOLE CONSTRUCTION Special Standard ☐ (Attach copy)Depth of Completed Hole 200.00 ft.

BORE HOLE			SEAL			sacks/
Dia	From	To	Material	From	To	Amt lbs
3.87	0	200	Bentonite Chips	0	10	1 S
			Bentonite Grout	10	200	4 S

Backfill placed from _____ ft. to _____ ft. Material _____
 Filter pack from _____ ft. to _____ ft. Material _____ Size _____

(7) CASING/SCREEN

Casing	Screen	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
☐	☐						☐	☐	☐	☐
☐	☐						☐	☐	☐	☐
☐	☐						☐	☐	☐	☐
☐	☐						☐	☐	☐	☐
☐	☐						☐	☐	☐	☐

(8) WELL TESTS

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian
 Yield gal/min Drawdown Drill stem/Pump depth Duration(hr)

Temperature _____ °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer _____

Water quality concerns? ☐ Yes (describe below) TDS amount _____
 From To Description Amount Units

(9) LOCATION OF HOLE (legal description)

County MULTNOMAH Twp 1.00 N N/S Range 1.00 W E/W WM
 Sec 2 NE 1/4 of the NW 1/4 Tax Lot 200
 Tax Map Number _____ Lot _____
 Lat _____ " or 45.60567500 DMS or DD
 Long _____ " or -122.77713889 DMS or DD
☐ Street address of hole ☒ Nearest address

LOMBARD ST

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening				
Completed Well				

WATER BEARING ZONES

Flowing Artesian? ☐

Depth water was first found _____

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(11) SUBSURFACE LOG Ground Elevation _____

Material	From	To
Brown Sand	0	20
Grey sand	20	50
grey sand some gravel & silk	50	195
troutdale	195	200

Date Started 10/25/2022 Completed 10/27/2022**(12) ABANDONMENT LOG:**

Material	From	To	Amt	sacks/
Bentonite Chips	0	10	1	S
Bentonite Grout	10	200	4	S

Date Started 10/27/2022 Completed 10/27/2022

Professional Certification (to be signed by an Oregon licensed water or monitoring well constructor, Oregon registered geologist or professional engineer).

I accept responsibility for the construction, deepening, alteration, or abandonment work performed during the construction dates reported above. All work performed during this time is in compliance with Oregon geotechnical hole construction standards. This report is true to the best of my knowledge and belief.

License/Registration Number 1772 Date 11/11/2022First Name WILLIAM Last Name WRIGHTAffiliation WESTERN STATES

GEOTECHNICAL HOLE REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 139148

11/11/2022

Map of Hole



STATE OF OREGON
GEOTECHNICAL HOLE REPORT
 (as required by OAR 690-240-0035)

10/16/2025

(1) OWNER/PROJECT Hole Number B6

PROJECT NAME/NBR: RIVER MILE 3.5 9 2 25

First Name Last Name

Company RADIUS RECYCLING

Address 12005 N BURGARD ROAD

City PORTLAND State OR Zip 97203

 (2) TYPE OF WORK ☒ New ☐ Deepening ☒ Abandonment
☐ Alteration (repair/recondition)

(3) CONSTRUCTION

☐ Rotary Air ☐ Hand Auger ☐ Hollow stem auger☒ Rotary Mud ☐ Cable ☐ Push Probe☐ Other

(4) TYPE OF HOLE:

☒ Uncased Temporary ☐ Cased Temporary☐ Uncased Permanent ☐ Cased Permanent☐ Other ☐ Slope Stability

Other:

(5) USE OF HOLE

GEOTECHNICAL SOIL

(6) BORE HOLE CONSTRUCTION Special Standard ☐ (Attach copy)

Depth of Completed Hole 180.00 ft.

BORE HOLE			SEAL			sacks/
Dia	From	To	Material	From	To	Amt lbs
3.87	0	180				

 Backfill placed from ft. to ft. Material
 Filter pack from ft. to ft. Material Size

(7) CASING/SCREEN

Casing	Screen	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
☐	☐						☐	☐	☐	☐
☐	☐						☐	☐	☐	☐
☐	☐						☐	☐	☐	☐
☐	☐						☐	☐	☐	☐
☐	☐						☐	☐	☐	☐

(8) WELL TESTS

Type of Test	Yield (gal/min)	Drawdown	Drill Stem/ Pump Depth	Duration (hr)

Temperature °F Lab analysis ☐ Yes By

Supervising Geologist/Engineer

 Water quality concerns? ☐ Yes (describe below) TDS amount
 From To Description Amount Units

From	To	Description	Amount	Units

(9) LOCATION OF HOLE (legal description)

County MULTNOMAH Twp 2.00 N N/S Range 1.00 W E/W WM

Sec 35 NE 1/4 of the SW 1/4 Tax Lot 500

Tax Map Number Lot

Lat ° ' " or 45.61063611 DMS or DD

Long ° ' " or -122.77708889 DMS or DD

☐ Street address of hole ☒ Nearest address

12005 N BURGARD ROAD PORTLAND OREGON 97203

(10) STATIC WATER LEVEL

Date SWL(psi) + SWL(ft)

Existing Well / Pre-Alteration			
Completed Well			

 WATER BEARING ZONES Flowing Artesian? ☐ Dry Hole? ☐
 Depth water was first found

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)

(11) SUBSURFACE LOG Ground Elevation 29.77 FT

Material	From	To
gravel & cobbles	0	4
fill & debris	4	9
sands	9	25
silts	25	56
sand	56	140
corse sand	140	180

Date Started 9/15/2025 Completed 9/16/2025

(12) ABANDONMENT LOG:

Material	From	To	Amt	sacks/ lbs
Bentonite Chips	0	10	1	S
Bentonite Grout	10	180	4	S

Date Started 9/16/2025 Completed 9/16/2025

Professional Certification (to be signed by an Oregon licensed water or monitoring well constructor, Oregon registered geologist or professional engineer).

I accept responsibility for the construction, deepening, alteration, or abandonment work performed during the construction dates reported above. All work performed during this time is in compliance with Oregon geotechnical hole construction standards. This report is true to the best of my knowledge and belief.

License/Registration Number 10735 Date 10/16/2025

First Name DUSTIN Last Name HELMIG

Affiliation WESTERN STATES SOIL

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version:

GEOTECHNICAL HOLE REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 143932

10/16/2025

Map of Hole



STATE OF OREGON
GEOTECHNICAL HOLE REPORT
 (as required by OAR 690-240-0035)

10/16/2025

(1) OWNER/PROJECT Hole Number B10PROJECT NAME/NBR: RIVER MILE 3.5 9 2 25

First Name _____ Last Name _____
 Company RADIUS RECYCLING
 Address 12005 N BURGARD ROAD
 City PORTLAND State OR Zip 97203

(2) TYPE OF WORK ☒ New ☐ Deepening ☒ Abandonment
☐ Alteration (repair/recondition)

(3) CONSTRUCTION

☐ Rotary Air ☐ Hand Auger ☐ Hollow stem auger
☒ Rotary Mud ☐ Cable ☐ Push Probe
☐ Other _____

(4) TYPE OF HOLE:

☒ Uncased Temporary ☐ Cased Temporary
☐ Uncased Permanent ☐ Cased Permanent
☐ Other ☐ Slope Stability
 Other: _____

(5) USE OF HOLE

GEOTECHNICAL SOIL

(6) BORE HOLE CONSTRUCTION Special Standard ☐ (Attach copy)Depth of Completed Hole 180.00 ft.

BORE HOLE			SEAL				sacks/
Dia	From	To	Material	From	To	Amt	lbs
3.87	0	180					

Backfill placed from _____ ft. to _____ ft. Material _____
 Filter pack from _____ ft. to _____ ft. Material _____ Size _____

(7) CASING/SCREEN

Casing	Screen	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
☐	☐		☐				☐	☐	☐	☐
☐	☐		☐				☐	☐	☐	☐
☐	☐		☐				☐	☐	☐	☐
☐	☐		☐				☐	☐	☐	☐

(8) WELL TESTS

Type of Test	Yield (gal/min)	Drawdown	Drill Stem/ Pump Depth	Duration (hr)

Temperature _____ °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer _____

Water quality concerns?		☐ Yes (describe below) TDS amount		
From	To	Description	Amount	Units

(9) LOCATION OF HOLE (legal description)

County MULTNOMAH Twp 2.00 N N/S Range 1.00 W E/W WM
 Sec 35 NW 1/4 of the SW 1/4 Tax Lot 500
 Tax Map Number _____ Lot _____
 Lat _____ " or 45.61017500 DMS or DD
 Long _____ " or -122.78200556 DMS or DD
☐ Street address of hole ☒ Nearest address
12005 N BURGARD ROAD PORTLAND OREGON 97203

(10) STATIC WATER LEVEL

Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration			
Completed Well			

WATER BEARING ZONES

Flowing Artesian? ☐ Dry Hole? ☐

Depth water was first found _____

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(11) SUBSURFACE LOGGround Elevation 29.91 FT

Material	From	To
ac base rock	0	2
sands	2	180

Date Started 9/24/2025 Completed 9/25/2025**(12) ABANDONMENT LOG:**

Material	From	To	Amt	sacks/ lbs
Bentonite Chips	0	10	1	S
Bentonite Grout	10	180	4	S

Date Started 9/25/2025 Completed 9/25/2025

Professional Certification (to be signed by an Oregon licensed water or monitoring well constructor, Oregon registered geologist or professional engineer).

I accept responsibility for the construction, deepening, alteration, or abandonment work performed during the construction dates reported above. All work performed during this time is in compliance with Oregon geotechnical hole construction standards. This report is true to the best of my knowledge and belief.

License/Registration Number 10735 Date 10/16/2025First Name DUSTIN Last Name HELMIGAffiliation WESTERN STATES SOIL

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version:

GEOTECHNICAL HOLE REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 143936

10/16/2025

Map of Hole



Appendix C

Select Historical Aerial Photographs



Date Drawn: 7/8/2019
 File Name: 1355-19001-
 AppEaerial(v01)
 Drawn By: JOB
 Approved By: LDG

Lampros Steel
 9040 N Burgard Way
 Portland, Oregon

Appendix C Historical Aerial Photos



Date Drawn: 7/8/2019
 File Name: 1355-19001-
 AppEaerial(v01)
 Drawn By: JOB
 Approved By: LDG

Lampros Steel
 9040 N Burgard Way
 Portland, Oregon

Appendix C Historical Aerial Photos

Appendix D

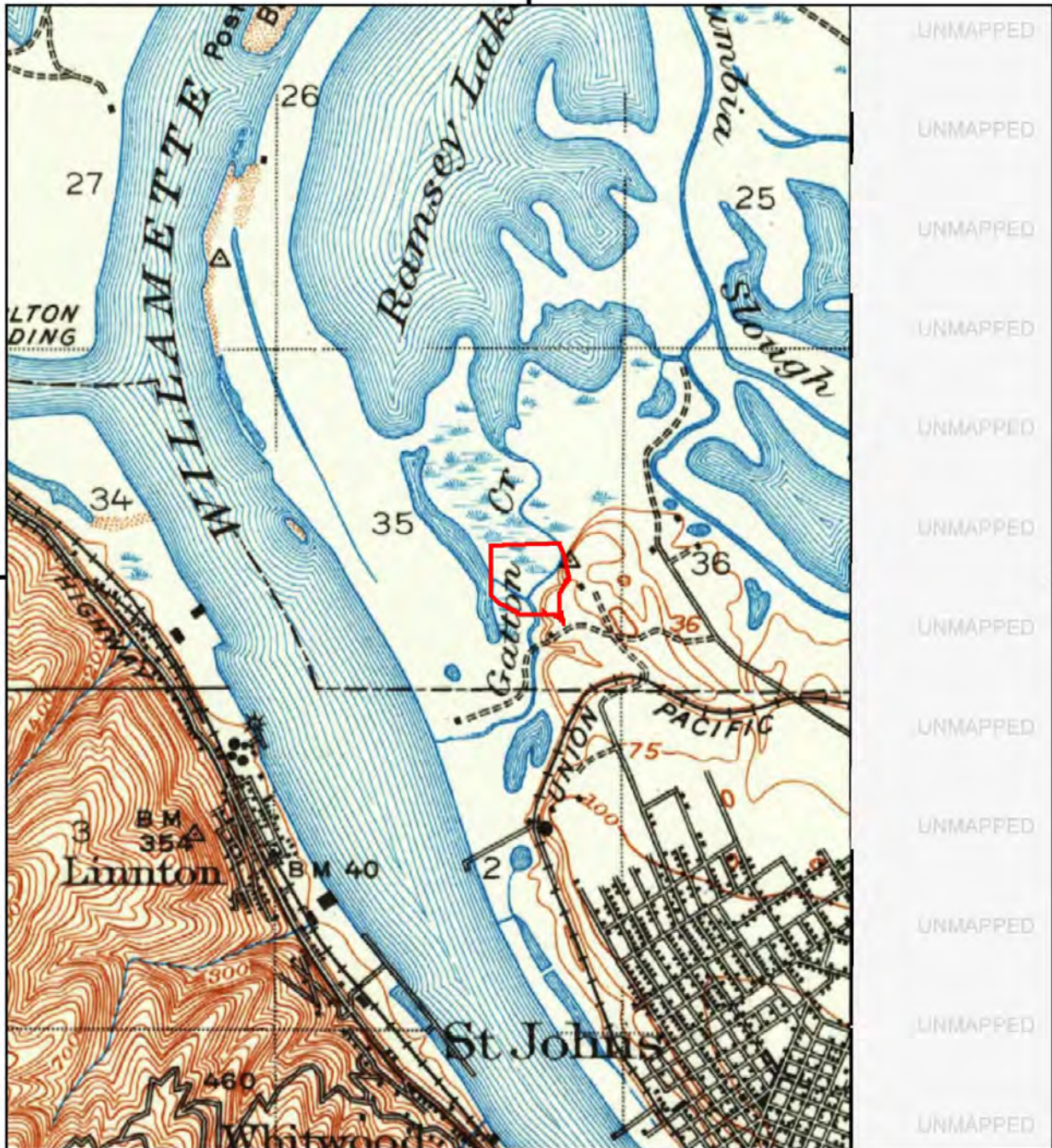
Select Historical Topographic Maps



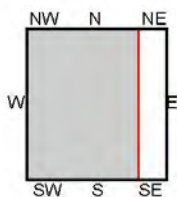
Date Drawn: 6/11/2026
File Name: 1355-19001-
AppDtopo(v02)
Drawn By: JOB
Approved By: LDG

Lampros Steel
9040 N Burgard Way
Portland, Oregon

Appendix D Historical Topo Maps



This report includes information from the following map sheet(s).



TP, Hillsboro, 1915, 15-minute

SITE NAME: Lampros Steel
ADDRESS: 9040 N Burgard Way
Portland, OR 97203
CLIENT: Evren Northwest, Inc.

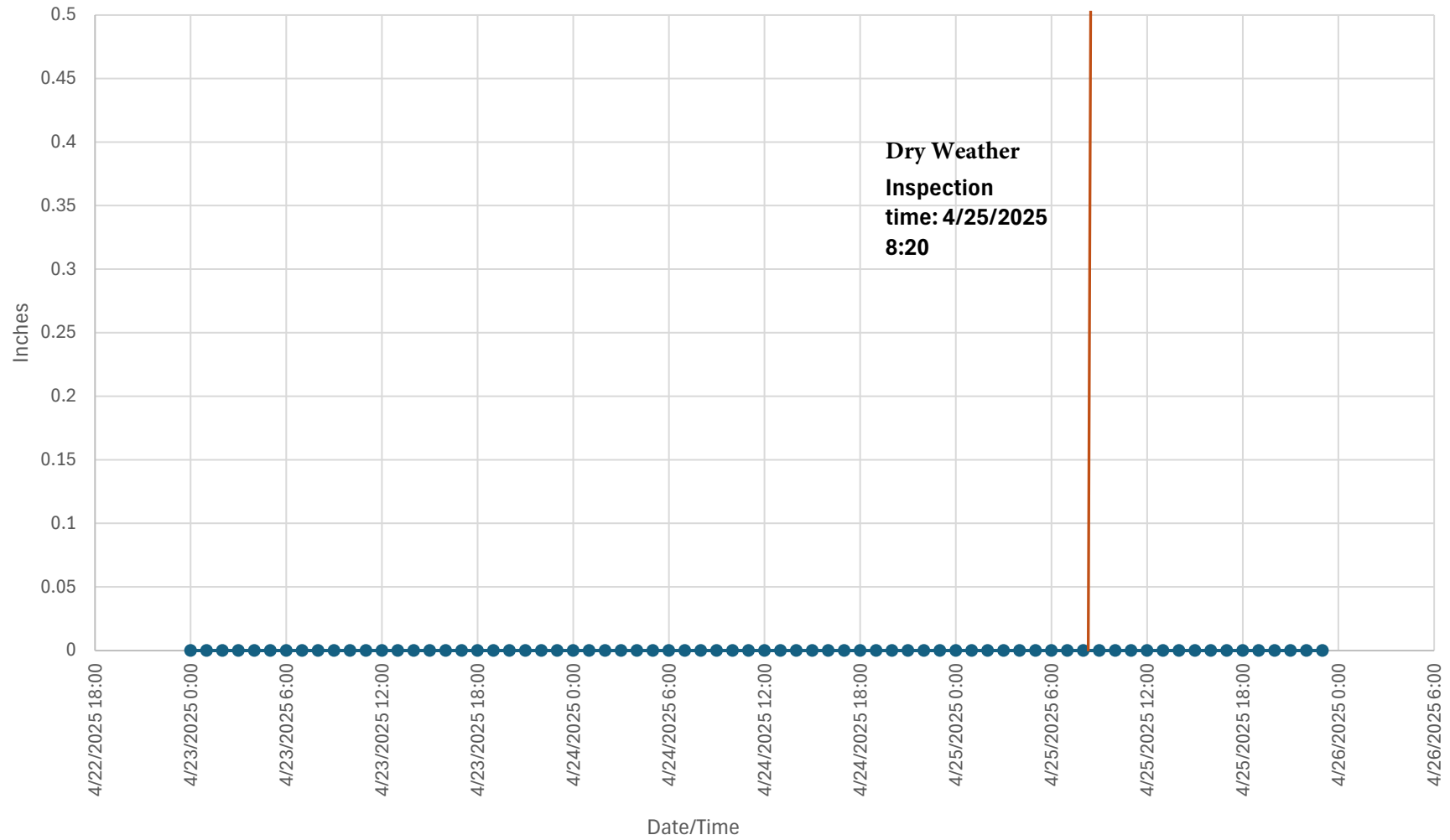


Appendix E

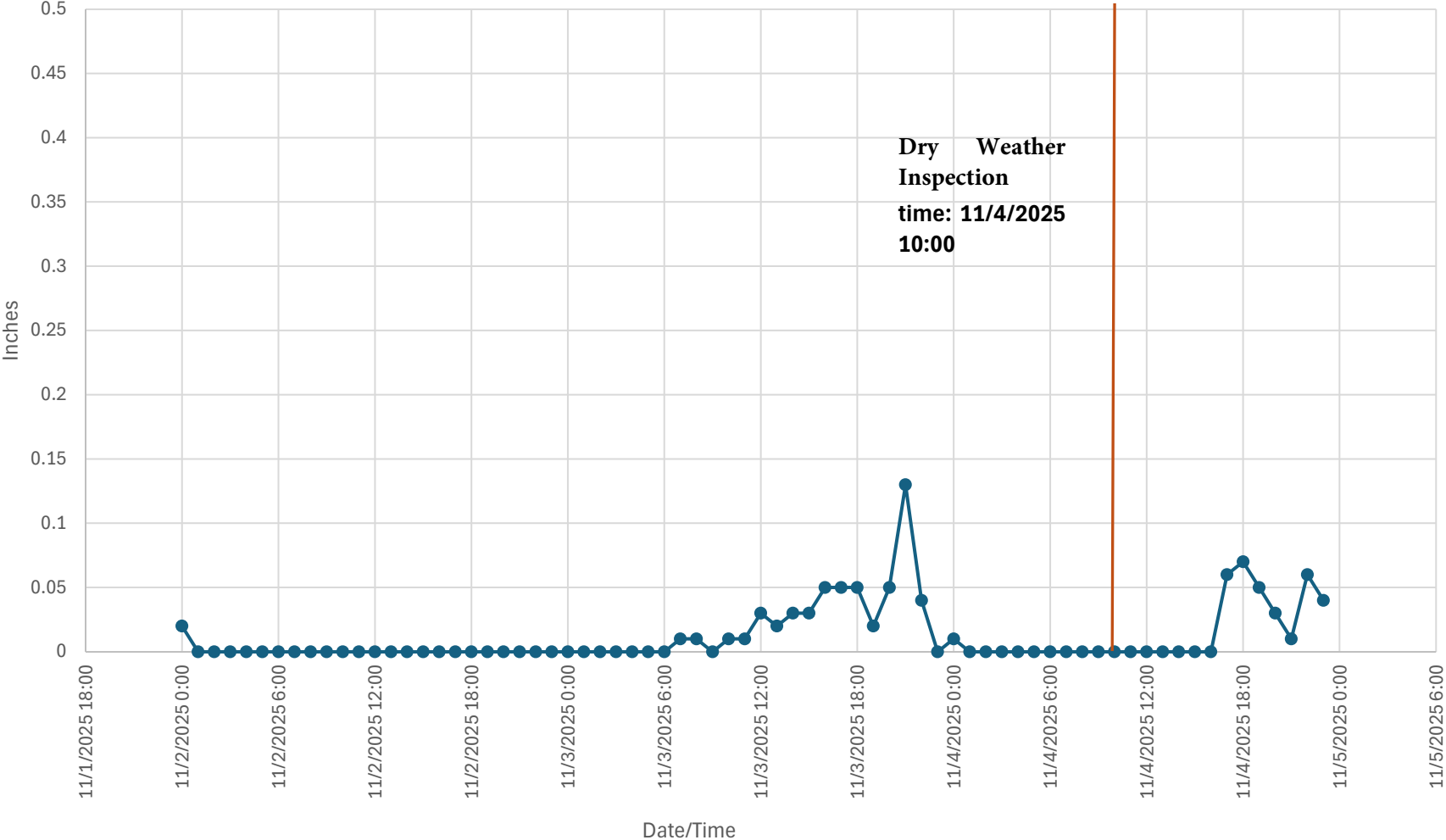
Precipitation Hydrographs

Hydrograph for April 23 - 25, 2025

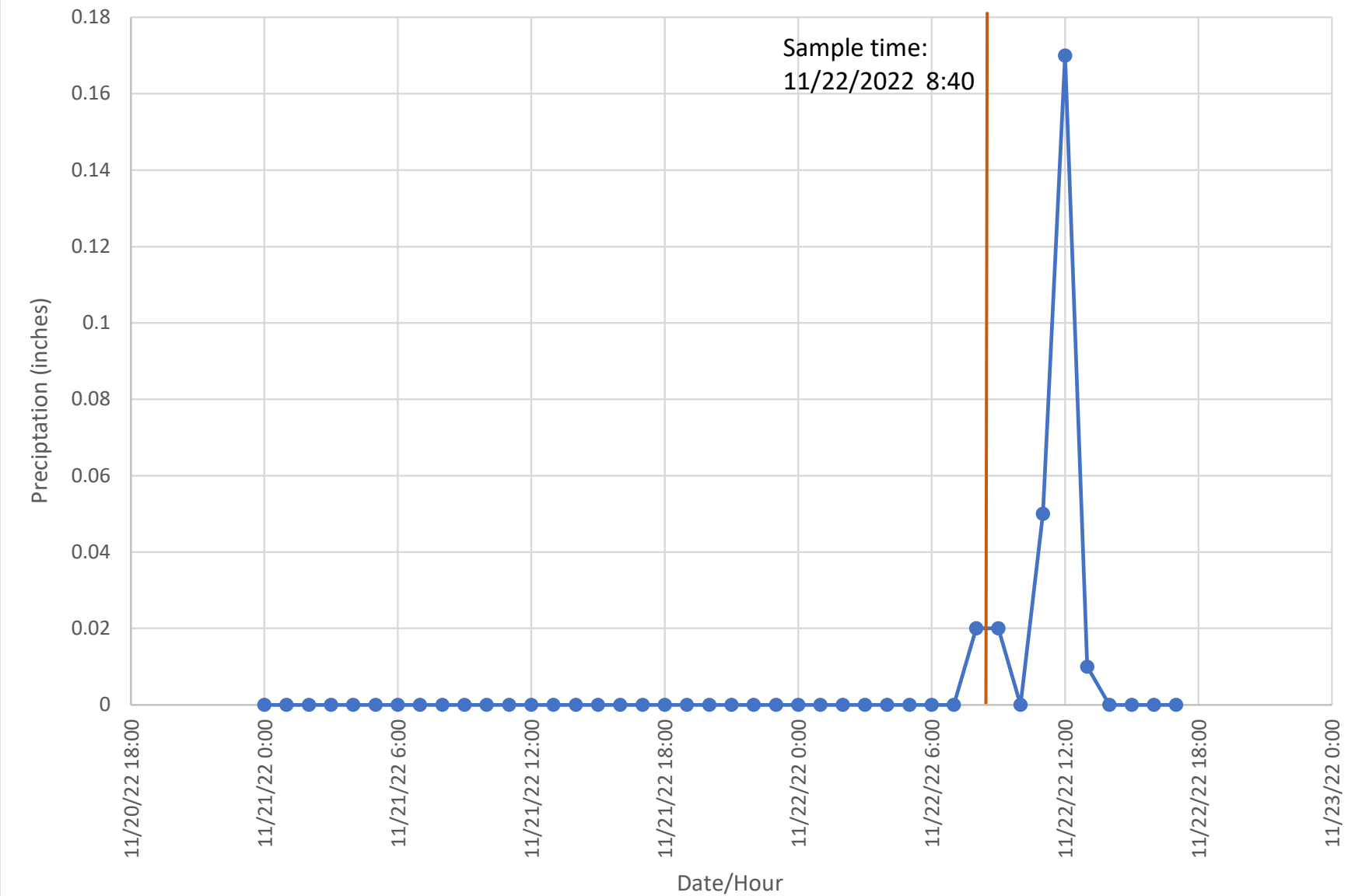
Shipyard Pump Station, Portland, Oregon



Hydrograph for November 2 - 4, 2025
Shipyard Pump Station, Portland, Oregon



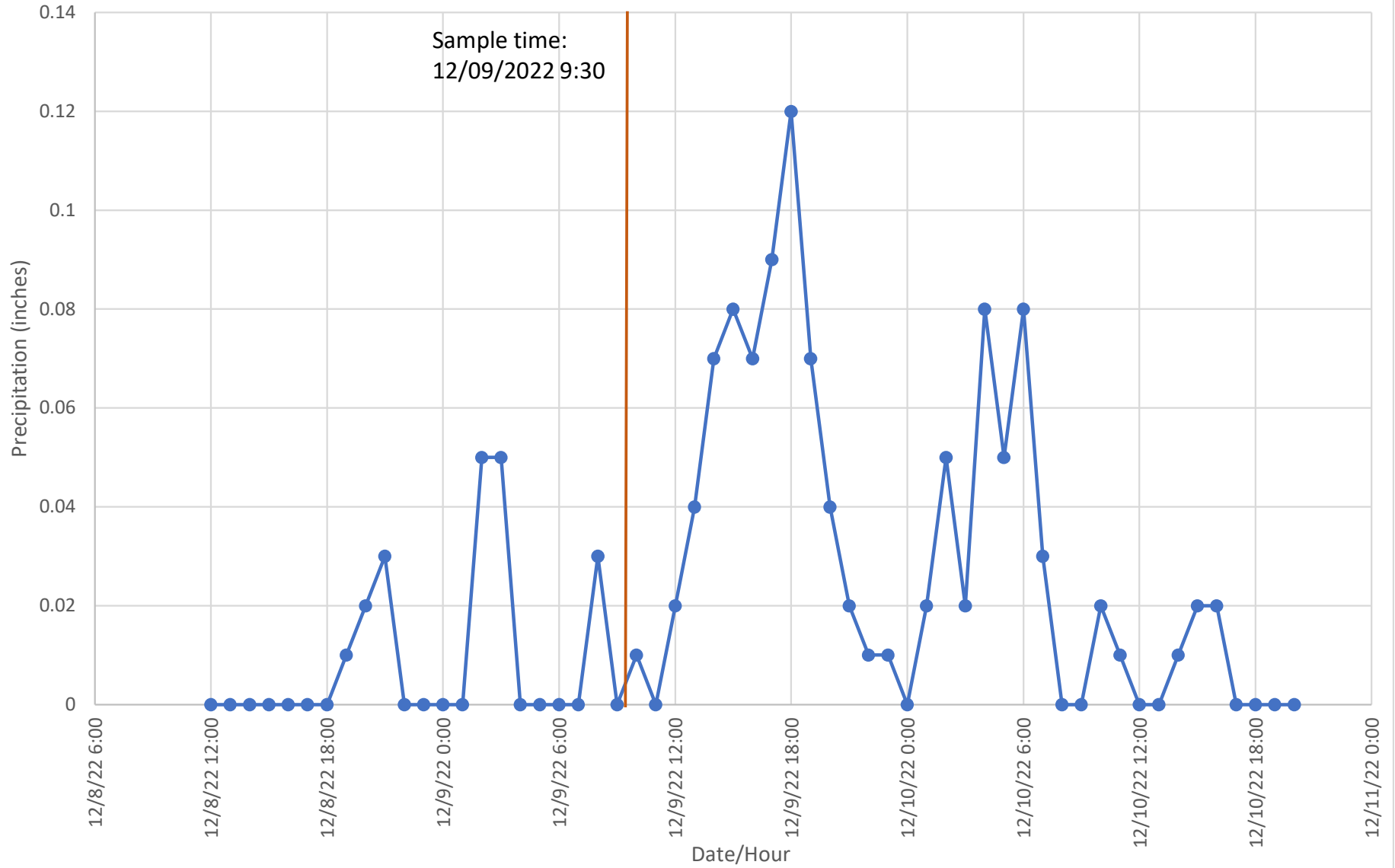
Hydrograph for November 20-22, 2022
N Sever Street Weather Station, Portland, Oregon



Hydrograph for December 8-10, 2022

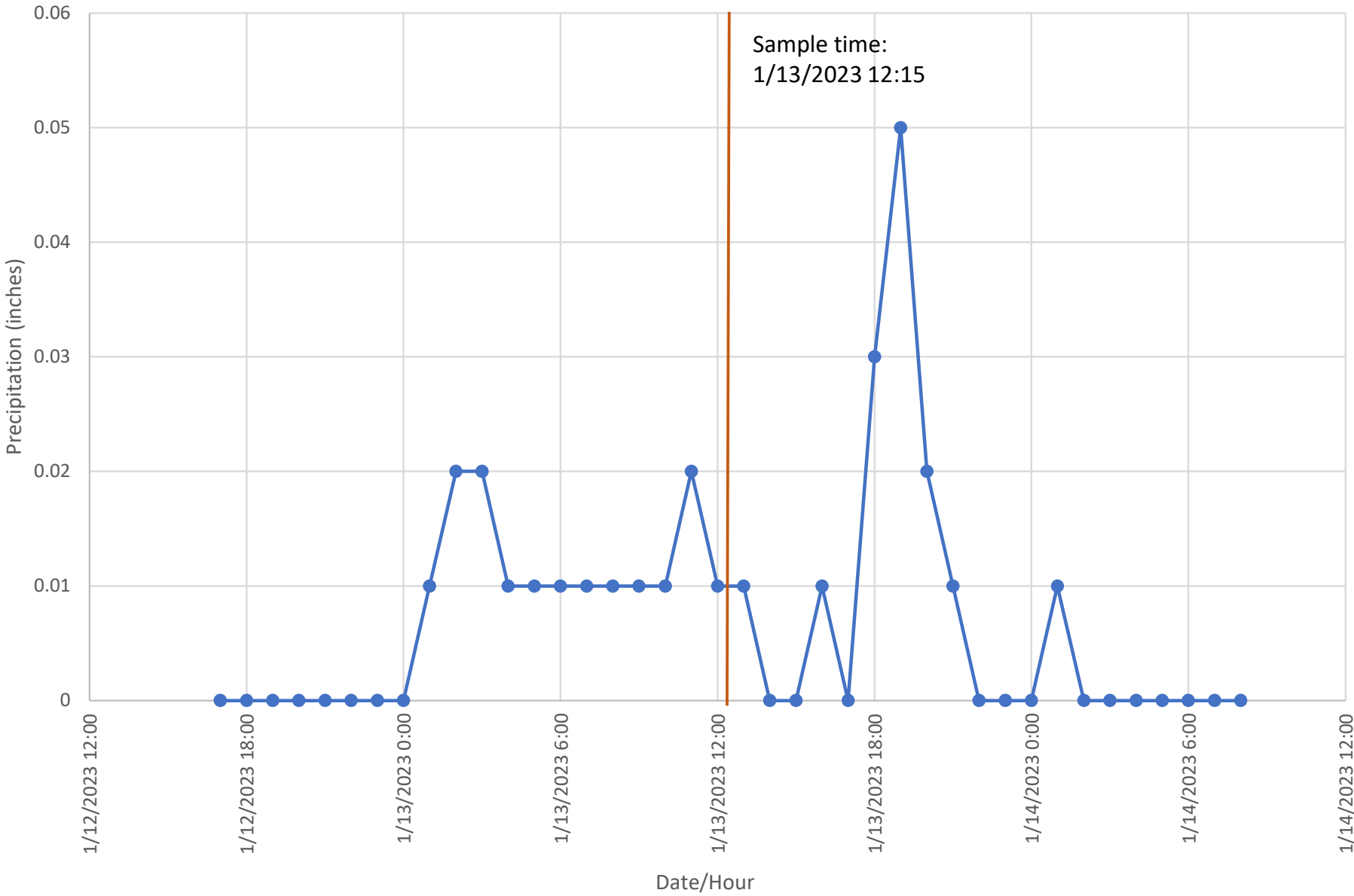
N Sever Street Weather Station, Portland, Oregon

Sample time:
12/09/2022 9:30



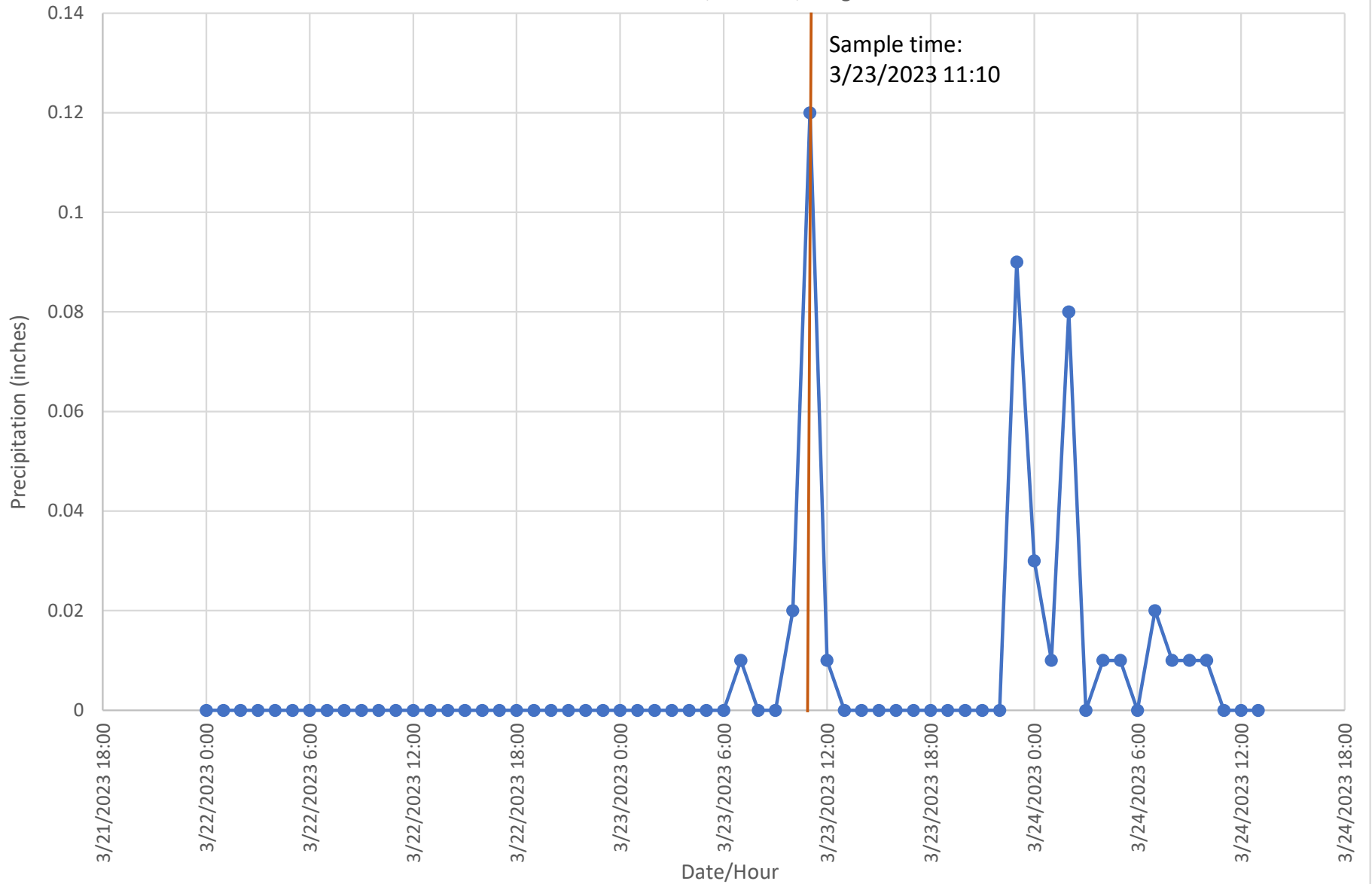
Hydrograph for January 12-14, 2023

N Sever Street Weather Station, Portland, Oregon

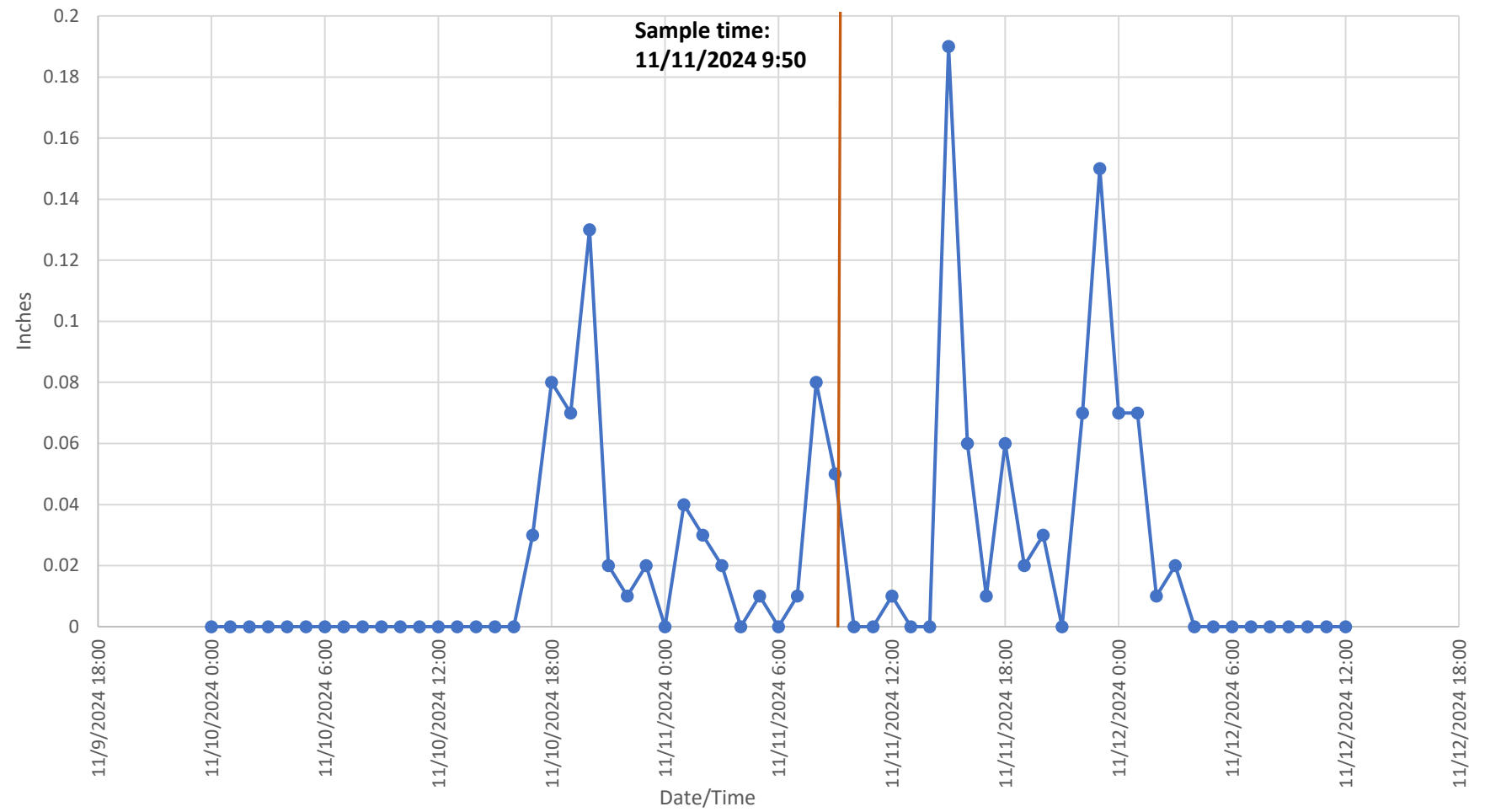


Hydrograph for March 22-24, 2023

N Sever Street Weather Station, Portland, Oregon

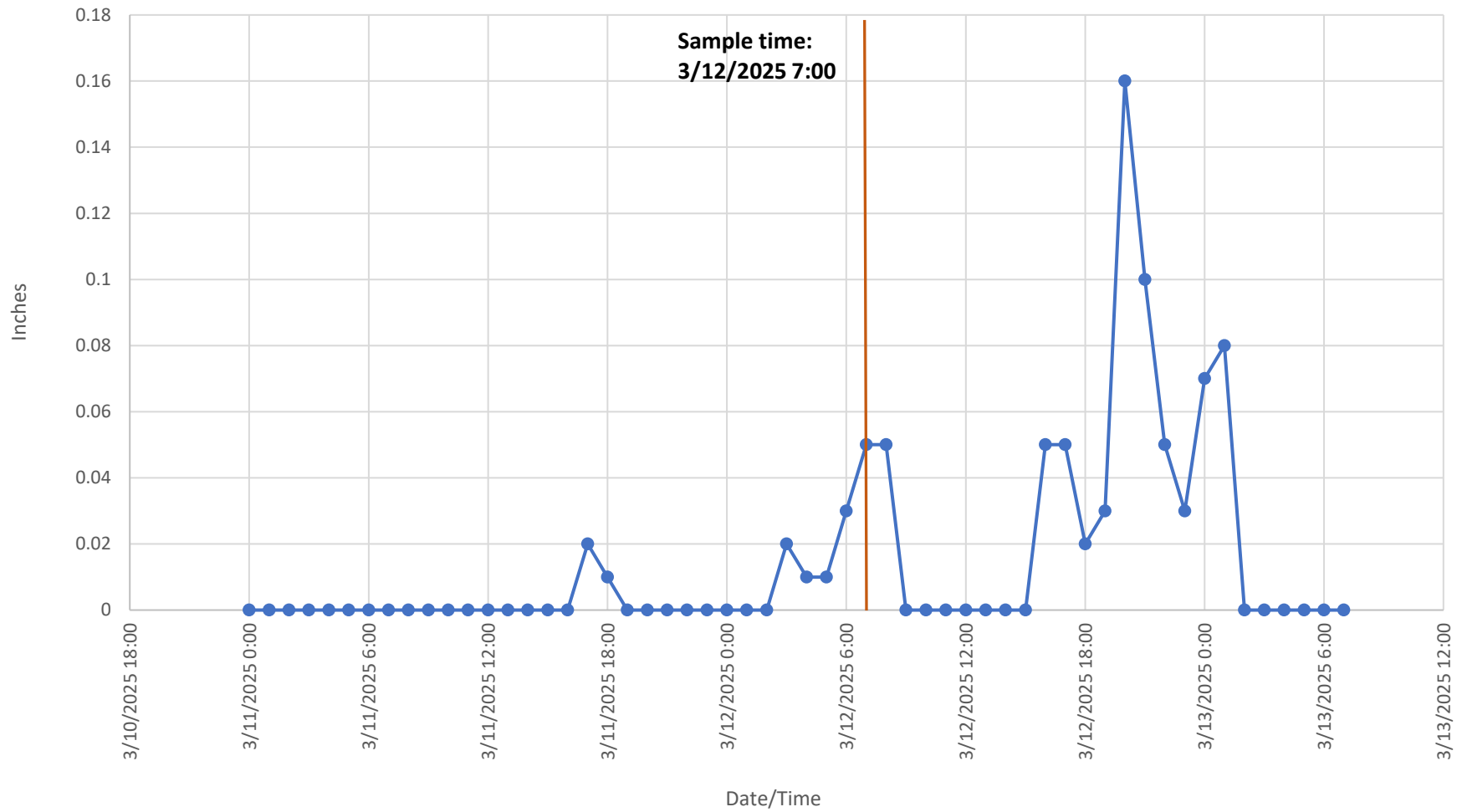


Hydrograph for November 10 - 12, 2024
Shipyard Pump Station, Portland, Oregon



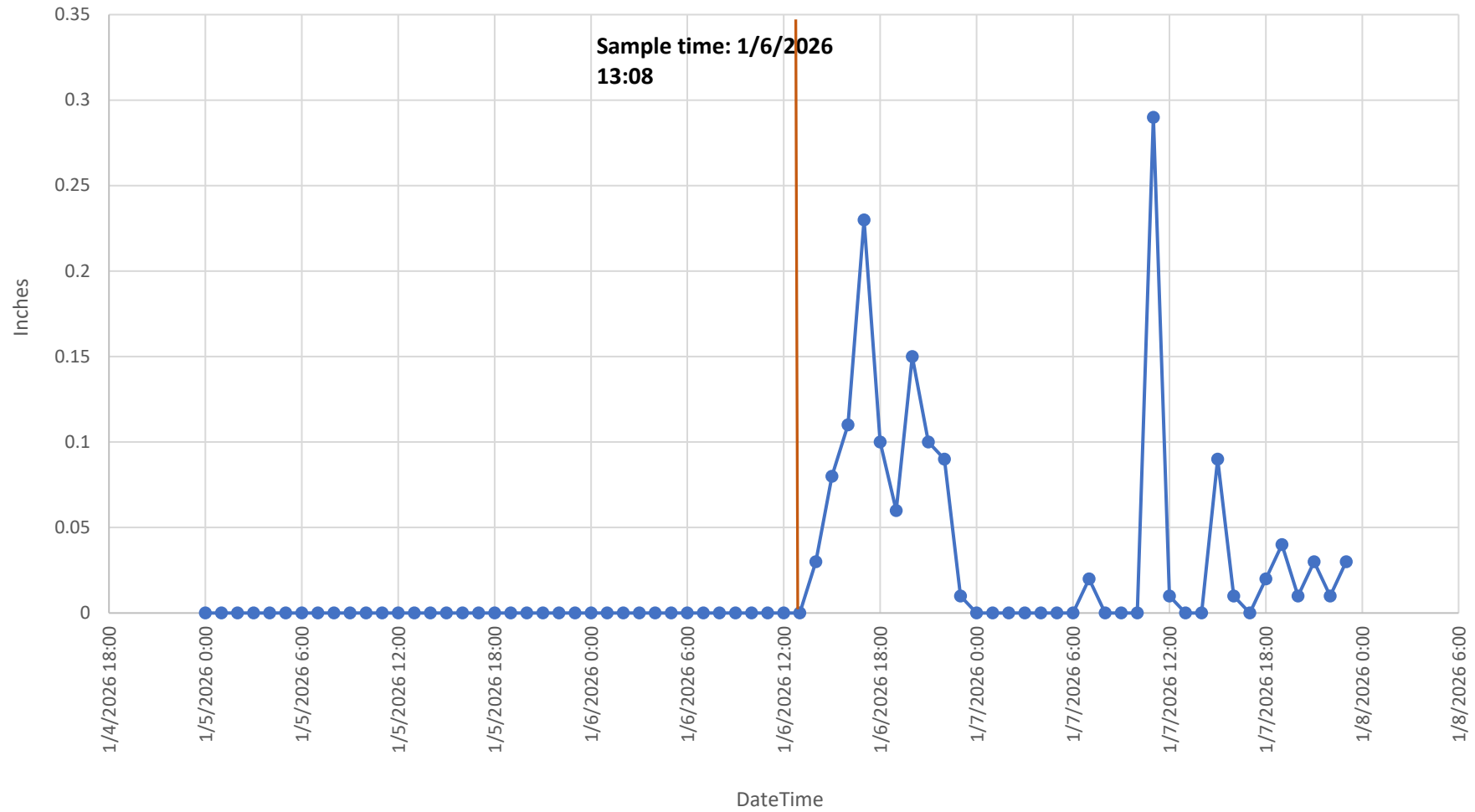
Hydrograph for March 11 - 13, 2025

Shipyard Pump Station, Portland, Oregon



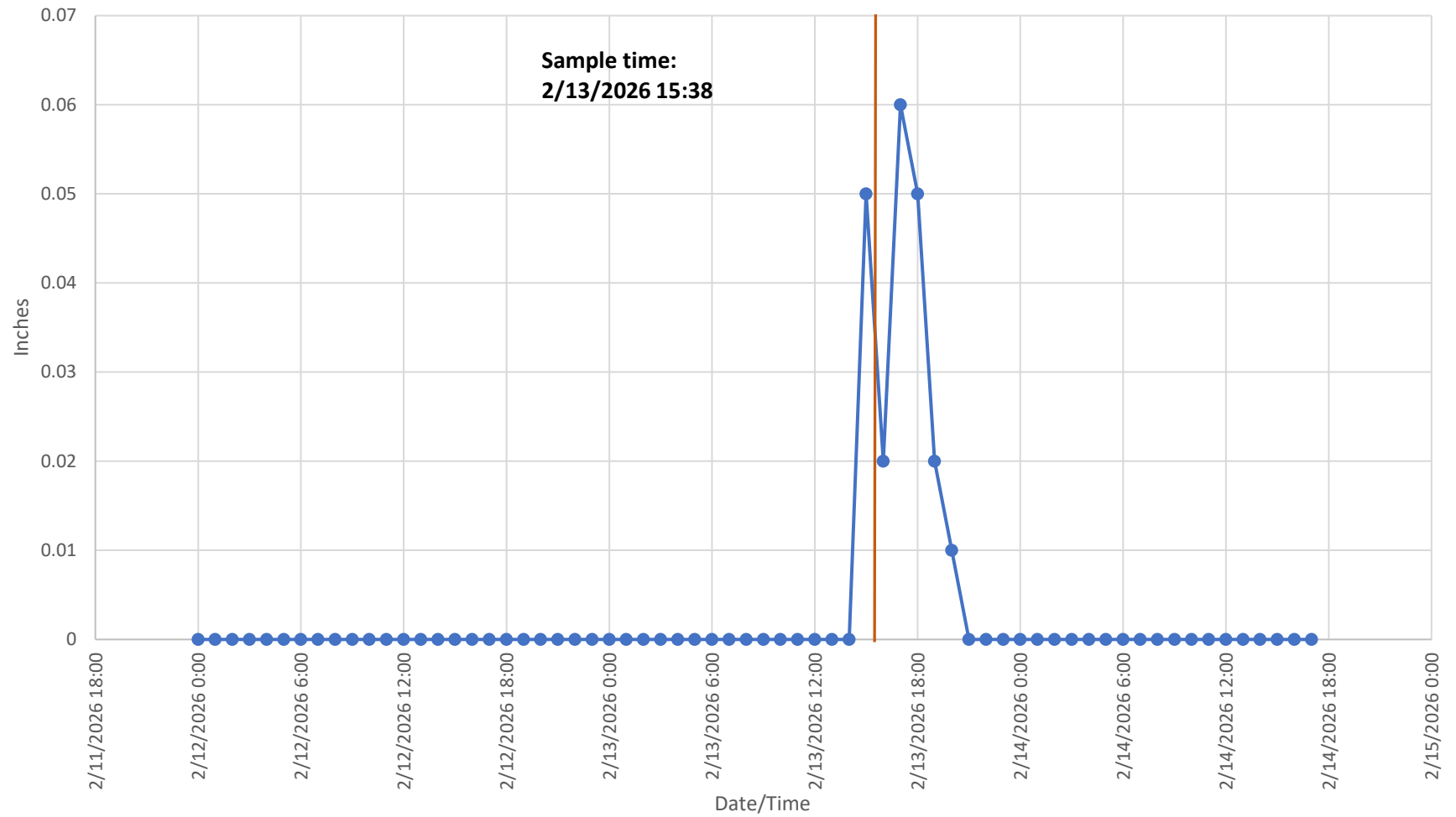
Hydrograph for January 5 - 8, 2026

Shipyard Pump Station, Portland, Oregon



Hydrograph for February 12 - 14, 2026

Shipyards Pump Station, Portland, Oregon



Appendix F

Laboratory Analytical Results

Summary: DATA VALID? ☒ YES

Analytical Laboratory Data Validation Check Sheet

Project Name: Lampros Steel-9040 N Burgard Way-Portland

Project Number: 1355-19001-02

Date of Review: 3/14/2023

Lab. Name: Enthalpy Analytical

Lab Batch ID #: 2301182

Chain of Custody

- | | | |
|--|---|--|
| 1.) Are all requested analyses reported? | ☒ yes | ☐ no |
| 2.) Were the requested methods used? | ☒ yes | ☐ no |
| 3.) Trip blank submitted? | ☐ yes | ☒ no |
| 4.) Field blank submitted? | ☐ yes | ☒ no |

Timing

- | | | | |
|--|---|-----------------------------|--|
| 5.) Samples extracted within holding times? | ☒ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 6.) Analysis performed within holding times? | ☒ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |

Quality Assurance/Quality Control

- | | | | |
|--|---|--|--|
| 7.) Are the required reporting limits reported? (MRLs vs MDLs/PQLs) | ☒ yes | ☐ no | |
| 8.) Are all reported values above either MRL or MDL? | ☒ yes | ☐ no | |
| 9.) Are all values between the MDL & PQL tagged as trace? | ☐ yes | ☐ no | ☒ NA |
| 10a.) Are reporting limits raised for other reason besides high analyte conc.? | ☐ yes | ☒ no | |
| 10b.) If so, are they footnoted? | ☐ yes | ☐ no | ☒ NA |
| 11.) Lab method blank completed? | ☒ yes | ☐ no | |
| 12.) Lab, Field, or Trip Blank(s) report detections? | ☐ yes | ☒ no | |
- If yes, indicate blank type, chemical(s) and concentration(s): _____

- | | | | |
|---|---|-----------------------------|--|
| 13.) For inorganics and metals, is there one method blank for each analyte? | ☐ yes | ☐ no | ☒ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | |
| 14.) For VOCs, is there one method blank for each day of analysis? | ☐ yes | ☐ no | ☒ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | |
| 15.) For SVOC's, is there one method blank for each extraction batch? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | |

Accuracy

- | | | | |
|--|---|--|-----------------------------|
| 16.) Is there a surrogate spike recovery for all VOC & SVOC samples? | ☒ yes | ☐ no | ☐ NA |
| Do all surrogate spike recoveries meet accepted criteria? | ☐ yes | ☒ no | |
| If not, are all discrepancies footnoted? | ☒ yes | ☐ no | ☐ NA |
- The surrogate spike recovery for 13C-2,3,7,8-TCDD was outside laboratory acceptance limits. (H)
- | | | | |
|--|---|-----------------------------|--|
| 17.) Is there a spike recovery for all Laboratory Control Samples? | ☒ yes | ☐ no | ☐ NA |
| Do all LCS/LCSD spike recoveries meet accepted criteria? | ☒ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 18.) Are all LCS/LCSD RPDs within acceptable limits? | ☐ yes | ☐ no | ☒ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |

Precision

- | | | | |
|---|------------------------------|-----------------------------|--|
| 19.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits? | ☐ yes | ☐ no | ☒ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits? | ☐ yes | ☐ no | ☒ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 21.) Do all RPD calculations for Field Duplicates meet accepted criteria? | ☐ yes | ☐ no | ☒ NA |

Comments:

The Cleanup Recovery Standard for 37C1-2,3,7,8-TCDD was outside laboratory acceptance limits. (H)

Several analytes were detected below the limit of quantitation. (J)

Matrix spike/matrix spike duplicate recoveries were not required by either method, so they were not performed.

Initial Review By: LP _____

Final Review By: _____

Analytical Laboratory Data Validation Check Sheet

Project Name: Lampros Steel- 9040 N Burgard Way, Portland

Project Number: 1355-19001-03

Date of Review: 6/13/23

Lab. Name: EDH

Lab Batch ID #: 2303225

Chain of Custody

- 1.) Are all requested analyses reported? ☒ yes ☐ no
- 2.) Were the requested methods used? ☒ yes ☐ no
- 3.) Trip blank submitted? ☐ yes ☒ no
- 4.) Field blank submitted? ☐ yes ☒ no

Timing

- 5.) Samples extracted within holding times? ☒ yes ☐ no
If not, are all discrepancies footnoted? ☐ yes ☐ no ☒ NA
- 6.) Analysis performed within holding times? ☒ yes ☐ no
If not, are all discrepancies footnoted? ☐ yes ☐ no ☒ NA

Quality Assurance/Quality Control

- 7.) Are the required reporting limits reported? (MRLs vs MDLs/PQLs) ☒ yes ☐ no
- 8.) Are all reported values above either MRL or MDL? ☒ yes ☐ no
- 9.) Are all values between the MDL & PQL tagged as trace? ☐ yes ☐ no ☒ NA
- 10a.) Are reporting limits raised for other reasons besides high analyte conc.? ☐ yes ☒ no
- 10b.) If so, are they footnoted? ☐ yes ☐ no ☒ NA
- 11.) Lab method blank completed? ☒ yes ☐ no
- 12.) Lab, Field, or Trip Blank(s) report detections? ☒ yes ☐ no
- If yes, indicate blank type, chemical(s) and concentration(s):

Method Blank:**PCB 1 detection reported (no flag)****The amount detected for PCBs 20, 21, 28, 31, 33, 43, 44, 49, 90, 101, 138, 153, 163, 164 are below the Reporting Limit/LOQ (J)**

- 13.) For inorganics and metals, is there one method blank for each analyte? ☐ yes ☐ no ☒ NA
If not, are all discrepancies footnoted? ☐ yes ☐ no
- 14.) For VOCs, is there one method blank for each day of analysis? ☐ yes ☐ no ☒ NA
If not, are all discrepancies footnoted? ☐ yes ☐ no
- 15.) For SVOC's, is there one method blank for each extraction batch? ☒ yes ☐ no ☐ NA
If not, are all discrepancies footnoted? ☐ yes ☐ no

Accuracy

- 16.) Is there a surrogate spike recovery for all VOC & SVOC samples? ☒ yes ☐ no ☐ NA
Do all surrogate spike recoveries meet accepted criteria? ☒ yes ☐ no
If not, are all discrepancies footnoted? ☐ yes ☐ no ☒ NA
- 17.) Is there a spike recovery for all Laboratory Control Samples? ☒ yes ☐ no ☐ NA
Do all LCS/LCSD spike recoveries meet accepted criteria? ☐ yes ☒ no
If not, are all discrepancies footnoted? ☒ yes ☐ no ☐ NA

PCB 1 was also detected in the method blank (B)**PCB 126 recovery and/or RPD was outside laboratory acceptance limits (H)**

- 18.) Are all LCS/LCSD RPDs within acceptable limits? ☐ yes ☐ no ☒ NA
If not, are all discrepancies footnoted? ☐ yes ☐ no ☒ NA

Precision

19.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits?

☐yes ☐no ☒NA

If not, are all discrepancies footnoted?

☐yes ☐no ☒NA

20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits?

☐yes ☐no ☒NA

If not, are all discrepancies footnoted?

☐yes ☐no ☒NA

21.) Do all RPD calculations for Field Duplicates meet accepted criteria?

☐yes ☐no ☒NA

Comments:

The amounts detected for OCDD and PCBs 41, 43, 47, 49, 56, 60, 64, 66, 71, 72, 76, 82, 85, 108, 112, 116, 134, 136, 138, 141, 143, 163, 164, 195, 196 & 203 are below the Reporting Limit/LOQ (J)

PCBs 20, 21, 31, 33, 43, 44, 49, 90, 101, 138, 153, 163, 164 were also detected in the method blank (B)

Initial Review By: AR

Final Review By: _____

Analytical Laboratory Data Validation Check Sheet

Project Name: Lampros Steel- 9040 N Burgard Way, Portland

Project Number: 1355-19001-03

Date of Review: 6/13/23

Lab. Name: F&BI

Lab Batch ID #: 303396

Chain of Custody

- | | | |
|--|---|--|
| 1.) Are all requested analyses reported? | ☒ yes | ☐ no |
| 2.) Were the requested methods used? | ☒ yes | ☐ no |
| 3.) Trip blank submitted? | ☐ yes | ☒ no |
| 4.) Field blank submitted? | ☐ yes | ☒ no |

Timing

- | | | |
|--|---|--|
| 5.) Samples extracted within holding times? | ☒ yes | ☐ no |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no ☒ NA |
| 6.) Analysis performed within holding times? | ☒ yes | ☐ no |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no ☒ NA |

Quality Assurance/Quality Control

- | | | |
|--|---|--|
| 7.) Are the required reporting limits reported? (MRLs vs MDLs/PQLs) | ☒ yes | ☐ no |
| 8.) Are all reported values above either MRL or MDL? | ☒ yes | ☐ no |
| 9.) Are all values between the MDL & PQL tagged as trace? | ☐ yes | ☐ no ☒ NA |
| 10a.) Are reporting limits raised for other reason besides high analyte conc.? | ☐ yes | ☒ no |
| 10b.) If so, are they footnoted? | ☐ yes | ☐ no ☒ NA |
| 11.) Lab method blank completed? | ☒ yes | ☐ no |
| 12.) Lab, Field, or Trip Blank(s) report detections? | ☐ yes | ☒ no |
| If yes, indicate blank type, chemical(s) and concentration(s): | | |
| 13.) For inorganics and metals, is there one method blank for each analyte? | ☒ yes | ☐ no ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no |
| 14.) For VOCs, is there one method blank for each day of analysis? | ☐ yes | ☐ no ☒ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no |
| 15.) For SVOC's, is there one method blank for each extraction batch? | ☒ yes | ☐ no ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no |

Accuracy

- | | | | |
|--|---|-----------------------------|--|
| 16.) Is there a surrogate spike recovery for all VOC & SVOC samples? | ☒ yes | ☐ no | ☐ NA |
| Do all surrogate spike recoveries meet accepted criteria? | ☒ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 17.) Is there a spike recovery for all Laboratory Control Samples? | ☒ yes | ☐ no | ☐ NA |
| Do all LCS/LCSD spike recoveries meet accepted criteria? | ☒ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 18.) Are all LCS/LCSD RPDs within acceptable limits? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☒ yes | ☐ no | ☐ NA |

TSS was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable (nm).

Precision

- | | | | |
|---|---|-----------------------------|-----------------------------|
| 19.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☒ yes | ☐ no | ☐ NA |

Arsenic, Copper, Manganese & Zinc were spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful (b).

20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits?

☒yes ☐no ☐NA

If not, are all discrepancies footnoted?

☒yes ☐no ☐NA

Arsenic, Copper, Manganese & Zinc were spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful (b).

21.) Do all RPD calculations for Field Duplicates meet accepted criteria?

☐yes ☐no ☒NA

Comments:

N/A

Initial Review By: AR

Final Review By: _____

Analytical Laboratory Data Validation Check Sheet

Project Name: Lampros Steel- 9040 N Burgard Way, Portland

Project Number: 1355-19001-03

Date of Review: 6/13/23

Lab. Name: Fremont

Lab Batch ID #: 2303580

Chain of Custody

- | | | |
|--|---|--|
| 1.) Are all requested analyses reported? | ☒ yes | ☐ no |
| 2.) Were the requested methods used? | ☒ yes | ☐ no |
| 3.) Trip blank submitted? | ☐ yes | ☒ no |
| 4.) Field blank submitted? | ☐ yes | ☒ no |

Timing

- | | | | |
|--|---|-----------------------------|--|
| 5.) Samples extracted within holding times? | ☒ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 6.) Analysis performed within holding times? | ☒ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |

Quality Assurance/Quality Control

- | | | | |
|---|---|--|--|
| 7.) Are the required reporting limits reported? (MRLs vs MDLs/PQLs) | ☒ yes | ☐ no | |
| 8.) Are all reported values above either MRL or MDL? | ☒ yes | ☐ no | |
| 9.) Are all values between the MDL & PQL tagged as trace? | ☐ yes | ☐ no | ☒ NA |
| 10a.) Are reporting limits raised for other reasons besides high analyte conc.? | ☐ yes | ☒ no | |
| 10b.) If so, are they footnoted? | ☐ yes | ☐ no | ☒ NA |
| 11.) Lab method blank completed? | ☒ yes | ☐ no | |
| 12.) Lab, Field, or Trip Blank(s) report detections? | ☐ yes | ☒ no | |
| If yes, indicate blank type, chemical(s) and concentration(s): | | | |
| 13.) For inorganics and metals, is there one method blank for each analyte? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | |
| 14.) For VOCs, is there one method blank for each day of analysis? | ☐ yes | ☐ no | ☒ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | |
| 15.) For SVOC's, is there one method blank for each extraction batch? | ☐ yes | ☐ no | ☒ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | |

Accuracy

- | | | | |
|--|---|-----------------------------|--|
| 16.) Is there a surrogate spike recovery for all VOC & SVOC samples? | ☐ yes | ☐ no | ☒ NA |
| Do all surrogate spike recoveries meet accepted criteria? | ☐ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 17.) Is there a spike recovery for all Laboratory Control Samples? | ☒ yes | ☐ no | ☐ NA |
| Do all LCS/LCSD spike recoveries meet accepted criteria? | ☒ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 18.) Are all LCS/LCSD RPDs within acceptable limits? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |

Precision

- | | | | |
|---|---|-----------------------------|--|
| 19.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits? | ☒ yes | ☐ no | ☐ NA |

If not, are all discrepancies footnoted?

☐yes ☐no ☒NA

21.) Do all RPD calculations for Field Duplicates meet accepted criteria?

☐yes ☐no ☒NA

Comments:

N/A

Initial Review By: AR

Final Review By: _____

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

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January 24, 2023

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the results from the testing of material submitted on December 10, 2022 from the 1355-19001-03, F&BI 212185 project. There are 10 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Neil Woller, Paul Trone, Evan Bruggeman
ENW0124R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 10, 2022 by Friedman & Bruya, Inc. from the Evren Northwest 1355-19001-03, F&BI 212185 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
212185 -01	M1001-SW-221209

Sample M1001-SW-221209 was sent to Frontier Analytical for dioxin and furan and PCB congener analyses. The report is enclosed.

The 8270E calibration standard failed the acceptance criteria for several analytes. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	M1001-SW-221209	Client:	Evren Northwest
Date Received:	12/10/23	Project:	1355-19001-03, F&BI 212185
Date Extracted:	12/12/22	Lab ID:	212185-01
Date Analyzed:	12/16/22	Data File:	212185-01.170
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	0.330
Cadmium	<0.2
Chromium	2.08
Copper	8.50
Lead	3.36
Manganese	72.1
Silver	<0.2
Zinc	67.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-03, F&BI 212185
Date Extracted:	12/12/22	Lab ID:	I2-889 mb
Date Analyzed:	12/12/22	Data File:	I2-889 mb.036
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<0.2
Cadmium	<0.2
Chromium	<1
Copper	<5
Lead	<0.2
Manganese	<1
Silver	<0.2
Zinc	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID: M1001-SW-221209	Client: Evren Northwest
Date Received: 12/10/22	Project: 1355-19001-03, F&BI 212185
Date Extracted: 12/13/22	Lab ID: 212185-01
Date Analyzed: 12/15/22	Data File: 121511.D
Matrix: Water	Instrument: GCMS9
Units: ug/L (ppb)	Operator: VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	17	10	60
Phenol-d6	12	10	49
Nitrobenzene-d5	37	15	144
2-Fluorobiphenyl	35	25	128
2,4,6-Tribromophenol	47	10	142
Terphenyl-d14	51	41	138

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<2	2,6-Dinitrotoluene	<1
Bis(2-chloroethyl) ether	<0.2	3-Nitroaniline	<20
2-Chlorophenol	<2	Acenaphthene	<0.02
1,3-Dichlorobenzene	<0.2	2,4-Dinitrophenol	<6
1,4-Dichlorobenzene	<0.2	Dibenzofuran	<0.2
1,2-Dichlorobenzene	<0.2	2,4-Dinitrotoluene	<1
Benzyl alcohol	<2	4-Nitrophenol	<6
2,2'-Oxybis(1-chloropropane)	<0.2	Diethyl phthalate	<2
2-Methylphenol	<2	Fluorene	<0.02
Hexachloroethane	<0.2	4-Chlorophenyl phenyl ether	<0.2
N-Nitroso-di-n-propylamine	<0.2	N-Nitrosodiphenylamine	<0.2
3-Methylphenol + 4-Methylphenol	<4	4-Nitroaniline	<20
Nitrobenzene	<0.2	4,6-Dinitro-2-methylphenol	<6
Isophorone	<0.2	4-Bromophenyl phenyl ether	<0.2
2-Nitrophenol	<2	Hexachlorobenzene	<0.2
2,4-Dimethylphenol	<2	Pentachlorophenol	<1
Benzoic acid	<10	Phenanthrene	0.045
Bis(2-chloroethoxy)methane	<0.2	Anthracene	<0.02
2,4-Dichlorophenol	<2	Carbazole	<0.2
1,2,4-Trichlorobenzene	<0.2	Di-n-butyl phthalate	<2 ca
Naphthalene	<0.2	Fluoranthene	0.043
Hexachlorobutadiene	<0.2	Pyrene	0.078
4-Chloroaniline	<20	Benzyl butyl phthalate	<2
4-Chloro-3-methylphenol	<2	Benz(a)anthracene	<0.02
2-Methylnaphthalene	<0.2	Chrysene	0.042
1-Methylnaphthalene	<0.2	Bis(2-ethylhexyl) phthalate	<3.2
Hexachlorocyclopentadiene	<0.6	Di-n-octyl phthalate	<2
2,4,6-Trichlorophenol	<2	Benzo(a)pyrene	0.025
2,4,5-Trichlorophenol	<2	Benzo(b)fluoranthene	0.048
2-Chloronaphthalene	<0.2	Benzo(k)fluoranthene	<0.02
2-Nitroaniline	<1	Indeno(1,2,3-cd)pyrene	0.022
Dimethyl phthalate	<2	Dibenz(a,h)anthracene	<0.02
Acenaphthylene	<0.02	Benzo(g,h,i)perylene	<0.04

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-03, F&BI 212185
Date Extracted:	12/13/22	Lab ID:	02-2950 mb 1/0.5
Date Analyzed:	12/13/22	Data File:	121308.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	34	10	60
Phenol-d6	24	10	49
Nitrobenzene-d5	76	15	144
2-Fluorobiphenyl	71	25	128
2,4,6-Tribromophenol	74	10	142
Terphenyl-d14	88	41	138

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1	2,6-Dinitrotoluene	<0.5
Bis(2-chloroethyl) ether	<0.1	3-Nitroaniline	<10
2-Chlorophenol	<1	Acenaphthene	<0.01
1,3-Dichlorobenzene	<0.1	2,4-Dinitrophenol	<3 ca
1,4-Dichlorobenzene	<0.1	Dibenzofuran	<0.1
1,2-Dichlorobenzene	<0.1	2,4-Dinitrotoluene	<0.5
Benzyl alcohol	<1	4-Nitrophenol	<3
2,2'-Oxybis(1-chloropropane)	<0.1	Diethyl phthalate	<1
2-Methylphenol	<1	Fluorene	<0.01
Hexachloroethane	<0.1	4-Chlorophenyl phenyl ether	<0.1
N-Nitroso-di-n-propylamine	<0.1	N-Nitrosodiphenylamine	<0.1
3-Methylphenol + 4-Methylphenol	<2	4-Nitroaniline	<10
Nitrobenzene	<0.1	4,6-Dinitro-2-methylphenol	<3
Isophorone	<0.1	4-Bromophenyl phenyl ether	<0.1
2-Nitrophenol	<1	Hexachlorobenzene	<0.1
2,4-Dimethylphenol	<1	Pentachlorophenol	<0.5
Benzoic acid	<5	Phenanthrene	<0.01
Bis(2-chloroethoxy)methane	<0.1	Anthracene	<0.01
2,4-Dichlorophenol	<1	Carbazole	<0.1
1,2,4-Trichlorobenzene	<0.1	Di-n-butyl phthalate	<1
Naphthalene	<0.1	Fluoranthene	<0.01
Hexachlorobutadiene	<0.1	Pyrene	<0.01
4-Chloroaniline	<10	Benzyl butyl phthalate	<1
4-Chloro-3-methylphenol	<1	Benz(a)anthracene	<0.01
2-Methylnaphthalene	<0.1	Chrysene	<0.01
1-Methylnaphthalene	<0.1	Bis(2-ethylhexyl) phthalate	<1.6
Hexachlorocyclopentadiene	<0.3 ca	Di-n-octyl phthalate	<1
2,4,6-Trichlorophenol	<1	Benzo(a)pyrene	<0.01
2,4,5-Trichlorophenol	<1	Benzo(b)fluoranthene	<0.01
2-Chloronaphthalene	<0.1	Benzo(k)fluoranthene	<0.01
2-Nitroaniline	<0.5	Indeno(1,2,3-cd)pyrene	<0.01
Dimethyl phthalate	<1	Dibenz(a,h)anthracene	<0.01
Acenaphthylene	<0.01	Benzo(g,h,i)perylene	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/24/23

Date Received: 12/10/22

Project: 1355-19001-03, F&BI 212185

Date Extracted: 12/13/22

Date Analyzed: 12/16/22

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Results Reported as mg/L (ppm)

<u>Sample ID</u> Laboratory ID	Total Suspended <u>Solids</u>
M1001-SW-221209 212185-01	26
Method Blank 02-2955 mb	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/24/23

Date Received: 12/10/22

Project: 1355-19001-03, F&BI 212185

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 212165-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<1	92	91	70-130	1
Cadmium	ug/L (ppb)	5	<1	98	98	70-130	0
Chromium	ug/L (ppb)	20	<1	93	98	70-130	5
Copper	ug/L (ppb)	20	<5	95	98	70-130	3
Lead	ug/L (ppb)	10	<1	93	93	70-130	0
Manganese	ug/L (ppb)	20	14.3	86	94	70-130	9
Silver	ug/L (ppb)	5	<1	93	92	70-130	1
Zinc	ug/L (ppb)	50	19.8	95	99	70-130	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	93	85-115
Cadmium	ug/L (ppb)	5	97	85-115
Chromium	ug/L (ppb)	20	96	85-115
Copper	ug/L (ppb)	20	101	85-115
Lead	ug/L (ppb)	10	100	85-115
Manganese	ug/L (ppb)	20	93	85-115
Silver	ug/L (ppb)	5	96	85-115
Zinc	ug/L (ppb)	50	98	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/24/23

Date Received: 12/10/22

Project: 1355-19001-03, F&BI 212185

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample 1/0.5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCS D	Acceptance Criteria	RPD (Limit 20)
Phenol	ug/L (ppb)	5	28	25	10-86	11
Bis(2-chloroethyl) ether	ug/L (ppb)	5	75	65	60-108	14
2-Chlorophenol	ug/L (ppb)	5	72	62	10-97	15
1,3-Dichlorobenzene	ug/L (ppb)	5	68	57	48-96	18
1,4-Dichlorobenzene	ug/L (ppb)	5	69	57	48-96	19
1,2-Dichlorobenzene	ug/L (ppb)	5	71	58	52-96	20
Benzyl alcohol	ug/L (ppb)	25	62	56	10-76	10
2,2'-Oxybis(1-chloropropane)	ug/L (ppb)	5	77	67	59-101	14
2-Methylphenol	ug/L (ppb)	5	64	57	10-80	12
Hexachloroethane	ug/L (ppb)	5	70	57	47-97	20
N-Nitroso-di-n-propylamine	ug/L (ppb)	5	85	74	71-106	14
3-Methylphenol + 4-Methylphenol	ug/L (ppb)	5	60	54	10-66	11
Nitrobenzene	ug/L (ppb)	5	80	71	60-90	12
Isophorone	ug/L (ppb)	5	81	73	71-110	10
2-Nitrophenol	ug/L (ppb)	5	88	81	27-120	8
2,4-Dimethylphenol	ug/L (ppb)	5	61	56	10-106	9
Benzoic acid	ug/L (ppb)	40	12	11	10-102	9
Bis(2-chloroethoxy)methane	ug/L (ppb)	5	79	70	55-117	12
2,4-Dichlorophenol	ug/L (ppb)	5	78	72	23-116	8
1,2,4-Trichlorobenzene	ug/L (ppb)	5	71	60	56-98	17
Naphthalene	ug/L (ppb)	5	75	64	62-97	16
Hexachlorobutadiene	ug/L (ppb)	5	70	58	48-100	19
4-Chloroaniline	ug/L (ppb)	25	65	61	28-121	6
4-Chloro-3-methylphenol	ug/L (ppb)	5	81	75	18-113	8
2-Methylnaphthalene	ug/L (ppb)	5	78	69	64-101	12
1-Methylnaphthalene	ug/L (ppb)	5	78	68	64-93	14
Hexachlorocyclopentadiene	ug/L (ppb)	5	57	55	49-113	4
2,4,6-Trichlorophenol	ug/L (ppb)	5	75	72	16-131	4
2,4,5-Trichlorophenol	ug/L (ppb)	5	79	78	26-129	1
2-Chloronaphthalene	ug/L (ppb)	5	75	69	67-102	8
2-Nitroaniline	ug/L (ppb)	25	82	80	31-168	2
Dimethyl phthalate	ug/L (ppb)	5	85	80	70-130	6
Acenaphthylene	ug/L (ppb)	5	81	74	70-130	9
2,6-Dinitrotoluene	ug/L (ppb)	5	90	86	70-130	5
3-Nitroaniline	ug/L (ppb)	25	76	75	33-128	1
Acenaphthene	ug/L (ppb)	5	79	74	70-130	7
2,4-Dinitrophenol	ug/L (ppb)	10	80	81	10-137	1
Dibenzofuran	ug/L (ppb)	5	81	76	67-114	6
2,4-Dinitrotoluene	ug/L (ppb)	5	95	90	53-132	5
4-Nitrophenol	ug/L (ppb)	10	35	33	10-89	6
Diethyl phthalate	ug/L (ppb)	5	88	82	60-128	7
Fluorene	ug/L (ppb)	5	82	78	70-130	5
4-Chlorophenyl phenyl ether	ug/L (ppb)	5	77	75	70-130	3
N-Nitrosodiphenylamine	ug/L (ppb)	5	79	76	70-130	4
4-Nitroaniline	ug/L (ppb)	25	70	71	32-124	1
4,6-Dinitro-2-methylphenol	ug/L (ppb)	5	87	94	10-146	8
4-Bromophenyl phenyl ether	ug/L (ppb)	5	77	75	70-130	3
Hexachlorobenzene	ug/L (ppb)	5	78	75	61-112	4
Pentachlorophenol	ug/L (ppb)	5	69	72	10-144	4
Phenanthrene	ug/L (ppb)	5	81	79	70-130	2
Anthracene	ug/L (ppb)	5	84	80	70-130	5
Carbazole	ug/L (ppb)	5	85	84	70-130	1
Di-n-butyl phthalate	ug/L (ppb)	5	87	87	28-147	0
Fluoranthene	ug/L (ppb)	5	85	84	70-130	1
Pyrene	ug/L (ppb)	5	87	81	70-130	7
Benzyl butyl phthalate	ug/L (ppb)	5	96	92	34-142	4
Benz(a)anthracene	ug/L (ppb)	5	85	81	70-130	5
Chrysene	ug/L (ppb)	5	85	81	70-130	5
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	5	89	89	44-140	0
Di-n-octyl phthalate	ug/L (ppb)	5	93	92	33-147	1
Benzo(a)pyrene	ug/L (ppb)	5	87	84	70-130	4
Benzo(b)fluoranthene	ug/L (ppb)	5	84	79	70-130	6
Benzo(k)fluoranthene	ug/L (ppb)	5	84	81	70-130	4
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	92	99	70-130	7
Dibenz(a,h)anthracene	ug/L (ppb)	5	88	98	70-130	11
Benzo(g,h,i)perylene	ug/L (ppb)	5	86	98	70-130	13

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/24/23

Date Received: 12/10/22

Project: 1355-19001-03, F&BI 212185

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR
TOTAL SUSPENDED SOLIDS BY METHOD 2540D**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	88	84	35-146	5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Test Report

January 12, 2023

Frontier Analytical Laboratory Project: 14850

Mr. Michael Erdahl
Friedman and Bruya, Inc.
3012 16th Ave. W
Seattle, WA 98119

Dear Mr. Erdahl,

The following results are associated with Frontier Analytical Laboratory project **14850**. This corresponds to your project number **212185** and purchase order number **D-85**. One aqueous sample was received on 12/28/2022 in good condition. This sample was extracted and analyzed by EPA Method 1613 for tetra through octa chlorinated dibenzo dioxins and furans. In addition, this sample was extracted and analyzed by EPA Method 1668 for all 209 polychlorinated biphenyls (PCBs). The Toxic Equivalency (TEQ) for your sample has been calculated using the 2005 World Health Organization's (WHO's) toxic equivalency factors (TEFs).

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains our sample tracking log and the analytical results. The Sample Receipt section contains your chain of custody, our sample login form and a sample photo. The enclosed results and electronic data deliverable (EDD) are specifically for the sample referenced in this report only. These results meet all NELAP requirements and shall not be reproduced except in full. Frontier Analytical Laboratory's State of Oregon NELAP certificate number is **4041**, our State of California ELAP certificate number is **2934** and our State of Washington certificate number is **C844**. This report along with the associated EDD has been emailed to you. A hardcopy of this report will not be sent to you unless specifically requested.

If you have any questions regarding project **14850**, please feel free to contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,



Bradley B. Silverbush
Laboratory Director

Frontier Analytical Laboratory

Sample Tracking Log

FAL Project ID: **14850**

Received on: **12/28/2022**

Project Due: **01/20/2023** Storage: **R-4**

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
14850-001-SA	0	212185	M1001-SW-221209	EPA 1613 D/F	Aqueous	12/09/2022	09:30 am	12/11/2023
14850-001-SA	0	212185	M1001-SW-221209	EPA 1668 PCB	Aqueous	12/09/2022	09:30 am	12/11/2023

EPA Method 1613 PCDD/F



FAL ID: 14850-001-MB
Client ID: Method Blank
Matrix: Aqueous
Batch No: X6329

Date Extracted: 01-06-2023
Date Received: NA
Amount: 1.00 L

ICal: PCDDFAL3-4-29-22
GC Column: DB5MS
Units: pg/L

Acquired: 01-11-2023
2005 WHO TEQ: 0.0

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.866		-	0.640				
1,2,3,7,8-PeCDD	ND	1.36		-	0.783				
1,2,3,4,7,8-HxCDD	ND	1.90		-	1.30				
1,2,3,6,7,8-HxCDD	ND	1.99		-	1.39	Total TCDD	ND	0.866	
1,2,3,7,8,9-HxCDD	ND	1.80		-	1.28	Total PeCDD	ND	1.36	
1,2,3,4,6,7,8-HpCDD	ND	2.19		-	1.17	Total HxCDD	ND	1.99	
OCDD	ND	2.95		-	2.00	Total HpCDD	ND	2.19	
2,3,7,8-TCDF	ND	0.965		-	0.624				
1,2,3,7,8-PeCDF	ND	1.46		-	0.751				
2,3,4,7,8-PeCDF	ND	1.47		-	0.793				
1,2,3,4,7,8-HxCDF	ND	0.961		-	0.781				
1,2,3,6,7,8-HxCDF	ND	0.992		-	0.803				
2,3,4,6,7,8-HxCDF	ND	1.08		-	0.827				
1,2,3,7,8,9-HxCDF	ND	1.50		-	0.973	Total TCDF	ND	0.965	
1,2,3,4,6,7,8-HpCDF	ND	1.52		-	0.773	Total PeCDF	ND	1.47	
1,2,3,4,7,8,9-HpCDF	ND	2.23		-	0.978	Total HxCDF	ND	1.50	
OCDF	ND	3.25		-	1.71	Total HpCDF	ND	2.23	
Internal Standards	% Rec	QC Limits	Qual						
13C-2,3,7,8-TCDD	78.1	25.0 - 164							
13C-1,2,3,7,8-PeCDD	67.1	25.0 - 181							
13C-1,2,3,4,7,8-HxCDD	81.9	32.0 - 141							
13C-1,2,3,6,7,8-HxCDD	81.9	28.0 - 130							
13C-1,2,3,4,6,7,8-HpCDD	76.2	23.0 - 140							
13C-OCDD	68.8	17.0 - 157							
13C-2,3,7,8-TCDF	78.9	24.0 - 169							
13C-1,2,3,7,8-PeCDF	73.8	24.0 - 185							
13C-2,3,4,7,8-PeCDF	75.6	21.0 - 178							
13C-1,2,3,4,7,8-HxCDF	77.7	26.0 - 152							
13C-1,2,3,6,7,8-HxCDF	80.2	26.0 - 123							
13C-2,3,4,6,7,8-HxCDF	77.0	28.0 - 136							
13C-1,2,3,7,8,9-HxCDF	74.8	29.0 - 147							
13C-1,2,3,4,6,7,8-HpCDF	76.7	28.0 - 143							
13C-1,2,3,4,7,8,9-HpCDF	69.3	26.0 - 138							
13C-OCDF	67.7	17.0 - 157							
Cleanup Surrogate									
37Cl-2,3,7,8-TCDD	84.0	35.0 - 197							

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- * Result taken from dilution or reinjection

Analyst:

Date: 1/12/2023

Reviewed By:

Date: 1/12/2023

EPA Method 1613 PCDD/F



FAL ID: 14850-001-OPR
Client ID: OPR
Matrix: Aqueous
Batch No: X6329

Date Extracted: 01-06-2023
Date Received: NA
Amount: 1.000 L

ICal: PCDDFAL3-4-29-22
GC Column: DB5MS
Units: ng/ml

Acquired: 01-11-2023
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	8.52	6.70 - 15.8	
1,2,3,7,8-PeCDD	44.6	35.0 - 71.0	
1,2,3,4,7,8-HxCDD	45.8	35.0 - 82.0	
1,2,3,6,7,8-HxCDD	47.9	38.0 - 67.0	
1,2,3,7,8,9-HxCDD	44.4	32.0 - 81.0	
1,2,3,4,6,7,8-HpCDD	46.7	35.0 - 70.0	
OCDD	98.0	78.0 - 144	
2,3,7,8-TCDF	8.42	7.50 - 15.8	
1,2,3,7,8-PeCDF	45.0	40.0 - 67.0	
2,3,4,7,8-PeCDF	45.4	34.0 - 80.0	
1,2,3,4,7,8-HxCDF	45.3	36.0 - 67.0	
1,2,3,6,7,8-HxCDF	46.2	42.0 - 65.0	
2,3,4,6,7,8-HxCDF	46.5	35.0 - 78.0	
1,2,3,7,8,9-HxCDF	46.1	39.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	48.5	41.0 - 61.0	
1,2,3,4,7,8,9-HpCDF	46.7	39.0 - 69.0	
OCDF	92.8	63.0 - 170	
Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	83.8	20.0 - 175	
13C-1,2,3,7,8-PeCDD	75.6	21.0 - 227	
13C-1,2,3,4,7,8-HxCDD	79.1	21.0 - 193	
13C-1,2,3,6,7,8-HxCDD	79.4	25.0 - 163	
13C-1,2,3,4,6,7,8-HpCDD	70.7	26.0 - 166	
13C-OCDD	69.4	13.0 - 198	
13C-2,3,7,8-TCDF	87.6	22.0 - 152	
13C-1,2,3,7,8-PeCDF	78.6	21.0 - 192	
13C-2,3,4,7,8-PeCDF	81.8	13.0 - 328	
13C-1,2,3,4,7,8-HxCDF	73.9	19.0 - 202	
13C-1,2,3,6,7,8-HxCDF	75.0	21.0 - 159	
13C-2,3,4,6,7,8-HxCDF	73.7	22.0 - 176	
13C-1,2,3,7,8,9-HxCDF	71.3	17.0 - 205	
13C-1,2,3,4,6,7,8-HpCDF	69.2	21.0 - 158	
13C-1,2,3,4,7,8,9-HpCDF	65.6	20.0 - 186	
13C-OCDF	68.9	13.0 - 198	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	92.4	31.0 - 191	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- * Result taken from dilution or reinjection

Analyst: 

Date: 1/12/2023

Reviewed By: 

Date: 1/12/2023

EPA Method 1613 PCDD/F



FAL ID: 14850-001-SA
Client ID: M1001-SW-221209
Matrix: Aqueous
Batch No: X6329

Date Extracted: 01-06-2023
Date Received: 12-28-2022
Amount: 0.973 L

ICal: PCDDFAL3-4-29-22
GC Column: DB5MS
Units: pg/L

Acquired: 01-11-2023
2005 WHO TEQ: 0.583

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.790		-	0.640				
1,2,3,7,8-PeCDD	ND	1.53		-	0.783				
1,2,3,4,7,8-HxCDD	ND	2.52		-	1.30				
1,2,3,6,7,8-HxCDD	ND	2.52		-	1.39	Total TCDD	ND	0.790	
1,2,3,7,8,9-HxCDD	ND	2.33		-	1.28	Total PeCDD	ND	1.53	
1,2,3,4,6,7,8-HpCDD	35.9	-		0.359	1.17	Total HxCDD	10.3	-	J
OCDD	316	-		0.0948	2.00	Total HpCDD	76.8	-	
2,3,7,8-TCDF	ND	0.875		-	0.624				
1,2,3,7,8-PeCDF	ND	1.46		-	0.751				
2,3,4,7,8-PeCDF	ND	1.53		-	0.793				
1,2,3,4,7,8-HxCDF	ND	1.76		-	0.781				
1,2,3,6,7,8-HxCDF	ND	1.87		-	0.803				
2,3,4,6,7,8-HxCDF	ND	1.89		-	0.827				
1,2,3,7,8,9-HxCDF	ND	2.69		-	0.973	Total TCDF	4.44	-	J
1,2,3,4,6,7,8-HpCDF	11.8	-	J	0.118	0.773	Total PeCDF	5.23	-	D,J,M
1,2,3,4,7,8,9-HpCDF	ND	2.24		-	0.978	Total HxCDF	14.2	-	D,J,M
OCDF	36.7	-	J	0.0110	1.71	Total HpCDF	27.7	-	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	90.1	25.0 - 164	
13C-1,2,3,7,8-PeCDD	78.7	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	91.4	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	95.5	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	84.0	23.0 - 140	
13C-OCDD	78.3	17.0 - 157	
13C-2,3,7,8-TCDF	89.4	24.0 - 169	
13C-1,2,3,7,8-PeCDF	84.4	24.0 - 185	
13C-2,3,4,7,8-PeCDF	83.5	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	85.8	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	89.7	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	85.2	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	79.6	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	81.3	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	73.2	26.0 - 138	
13C-OCDF	73.6	17.0 - 157	

Cleanup Surrogate

37Cl-2,3,7,8-TCDD 96.8 35.0 - 197

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1

B Analyte is present in Method Blank

C Chemical Interference

D Presence of Diphenyl Ethers

DNQ Analyte concentration is below calibration range

E Analyte concentration is above calibration range

F Analyte confirmation on secondary column

J Analyte concentration is below calibration range

M Maximum possible concentration

ND Analyte Not Detected at Detection Limit Level

NP Not Provided

P Pre-filtered through a Whatman 0.7um GF/F filter

S Sample acceptance criteria not met

X Matrix interferences

* Result taken from dilution or reinjection

Analyst: 

Date: 1/12/2023

Reviewed By: 

Date: 1/12/2023

EPA Method 1668 PCBs



FAL ID: 14850-001-MB
Client ID: Method Blank
Matrix: Aqueous
Batch No: X6325

Date Extracted: 01-04-2023
Date Received: NA
Amount: 1.000 L

ICal: DAILY209FAL4-1-5-23
GC Column: DB1MS
Units: pg/L

Acquired: 01-05-2023
Total Conc: 0.0

Page 1 of 3

Compound	Conc	DL	Qual	Coeluters	Compound	Conc	DL	Qual	Coeluters
PCB-1	ND	3.61			PCB-51	ND	5.82		
PCB-2	ND	5.62			PCB-52	ND	5.78	C	69
PCB-3	ND	7.07			PCB-53	ND	6.11		
PCB-4	ND	7.71			PCB-54	ND	4.85		
PCB-5	ND	9.59			PCB-55	ND	4.27		
PCB-6	ND	9.58			PCB-56	ND	7.88	C	60
PCB-7	ND	9.75			PCB-57	ND	4.58		
PCB-8	ND	9.68			PCB-58	ND	4.68		
PCB-9	ND	9.53			PCB-59	-	-	C042	42
PCB-10	ND	9.09			PCB-60	-	-	C056	56
PCB-11	ND	11.1			PCB-61	ND	4.90	C	70
PCB-12	ND	10.7			PCB-62	ND	4.53		
PCB-13	ND	11.0			PCB-63	ND	4.41		
PCB-14	ND	9.60			PCB-64	-	-	C041	41/71/72
PCB-15	ND	15.3			PCB-65	ND	4.78		
PCB-16	ND	6.30			PCB-66	ND	4.24	C	76
PCB-17	ND	7.06			PCB-67	ND	4.51		
PCB-18	ND	7.73			PCB-68	ND	4.28		
PCB-19	ND	8.18			PCB-69	-	-	C052	52
PCB-20	ND	12.5	C	21/33	PCB-70	-	-	C061	61
PCB-21	-	-	C020	20/33	PCB-71	-	-	C041	41/64/72
PCB-22	ND	11.7			PCB-72	-	-	C041	41/64/71
PCB-23	ND	11.0			PCB-73	ND	4.30		
PCB-24	ND	5.27			PCB-74	ND	4.53		
PCB-25	ND	12.0			PCB-75	-	-	C048	48
PCB-26	ND	12.3			PCB-76	-	-	C066	66
PCB-27	ND	5.24			PCB-77	ND	9.55		
PCB-28	ND	9.80			PCB-78	ND	7.97		
PCB-29	ND	12.4			PCB-79	ND	7.58		
PCB-30	ND	5.10			PCB-80	ND	3.90		
PCB-31	ND	12.9			PCB-81	ND	6.93		
PCB-32	ND	6.27			PCB-82	ND	10.6		
PCB-33	-	-	C020	20/21	PCB-83	ND	7.99	C	112
PCB-34	ND	11.0			PCB-84	ND	9.46	C	92
PCB-35	ND	15.6			PCB-85	ND	7.19	C	116
PCB-36	ND	13.4			PCB-86	ND	9.55		
PCB-37	ND	14.1			PCB-87	ND	7.01	C	117/125
PCB-38	ND	12.7			PCB-88	ND	7.30	C	91
PCB-39	ND	13.5			PCB-89	ND	9.28		
PCB-40	ND	7.60			PCB-90	ND	8.09	C	101
PCB-41	ND	4.87	C	64/71/72	PCB-91	-	-	C088	88
PCB-42	ND	5.47	C	59	PCB-92	-	-	C084	84
PCB-43	ND	6.25	C	49	PCB-93	ND	8.20		
PCB-44	ND	7.21			PCB-94	ND	8.44		
PCB-45	ND	6.85			PCB-95	ND	8.04		
PCB-46	ND	7.34			PCB-96	ND	5.90		
PCB-47	ND	6.09			PCB-97	ND	9.56		
PCB-48	ND	4.82	C	75	PCB-98	ND	7.98	C	102
PCB-49	-	-	C043	43	PCB-99	ND	6.87		
PCB-50	ND	6.09			PCB-100	ND	7.01		

EPA Method 1668 PCBs



FAL ID: 14850-001-MB
Client ID: Method Blank
Matrix: Aqueous
Batch No: X6325

Date Extracted: 01-04-2023
Date Received: NA
Amount: 1.000 L

ICal: DAILY209FAL4-1-5-23
GC Column: DB1MS
Units: pg/L

Acquired: 01-05-2023

Page 2 of 3

Compound	Conc	DL	Qual	Coeluters	Compound	Conc	DL	Qual	Coeluters
PCB-101	-	-	C090	90	PCB-151	ND	8.70		
PCB-102	-	-	C098	98	PCB-152	ND	5.04		
PCB-103	ND	7.11			PCB-153	ND	6.47		
PCB-104	ND	5.81			PCB-154	ND	5.62		
PCB-105	ND	6.46			PCB-155	ND	4.70		
PCB-106	ND	6.62	C	118	PCB-156	ND	6.36		
PCB-107	ND	6.06	C	108	PCB-157	ND	6.92		
PCB-108	-	-	C107	107	PCB-158	ND	5.91	C	160
PCB-109	ND	6.43			PCB-159	ND	6.03		
PCB-110	ND	6.07			PCB-160	-	-	C158	158
PCB-111	ND	6.43	C	115	PCB-161	-	-	C132	132
PCB-112	-	-	C083	83	PCB-162	-	-	C128	128
PCB-113	ND	7.51			PCB-163	-	-	C138	138/164
PCB-114	ND	6.23			PCB-164	-	-	C138	138/163
PCB-115	-	-	C111	111	PCB-165	-	-	C146	146
PCB-116	-	-	C085	85	PCB-166	ND	6.24		
PCB-117	-	-	C087	87/125	PCB-167	ND	6.52		
PCB-118	-	-	C	106	PCB-168	ND	6.10		
PCB-119	ND	6.17			PCB-169	ND	7.87		
PCB-120	ND	6.04			PCB-170	ND	7.58		
PCB-121	ND	6.08			PCB-171	ND	6.80		
PCB-122	ND	6.16			PCB-172	ND	7.51		
PCB-123	ND	5.78			PCB-173	ND	7.71		
PCB-124	ND	3.03			PCB-174	ND	6.69		
PCB-125	-	-	C087	87/117	PCB-175	ND	6.67		
PCB-126	ND	9.73			PCB-176	ND	4.88		
PCB-127	ND	6.49			PCB-177	ND	7.20		
PCB-128	ND	7.17	C	162	PCB-178	ND	6.85		
PCB-129	ND	9.51			PCB-179	ND	4.77		
PCB-130	ND	8.15			PCB-180	ND	6.97		
PCB-131	ND	9.35	C	133	PCB-181	ND	6.68		
PCB-132	ND	7.36	C	161	PCB-182	ND	5.97	C	187
PCB-133	-	-	C131	131	PCB-183	ND	5.96		
PCB-134	ND	9.36	C	143	PCB-184	ND	4.56		
PCB-135	ND	8.78			PCB-185	ND	6.64		
PCB-136	ND	5.05			PCB-186	ND	4.86		
PCB-137	ND	9.11			PCB-187	-	-	C182	182
PCB-138	ND	6.61	C	163/164	PCB-188	ND	5.83		
PCB-139	ND	7.65	C	149	PCB-189	ND	4.90		
PCB-140	ND	7.55			PCB-190	ND	5.48		
PCB-141	ND	8.15			PCB-191	ND	5.22		
PCB-142	ND	9.05			PCB-192	ND	5.39		
PCB-143	-	-	C134	134	PCB-193	ND	5.00		
PCB-144	ND	8.13			PCB-194	ND	3.58		
PCB-145	ND	5.04			PCB-195	ND	3.97		
PCB-146	ND	6.78	C	165	PCB-196	ND	6.28	C	203
PCB-147	ND	7.65			PCB-197	ND	4.60		
PCB-148	ND	6.82			PCB-198	ND	7.55		
PCB-149	-	-	C139	139	PCB-199	ND	6.20		
PCB-150	ND	4.79			PCB-200	ND	4.78		

EPA Method 1668 PCBs



FAL ID: 14850-001-MB
Client ID: Method Blank
Matrix: Aqueous
Batch No: X6325

Date Extracted: 01-04-2023
Date Received: NA
Amount: 1.000 L

ICal: DAILY209FAL4-1-5-23
GC Column: DB1MS
Units: pg/L

Acquired: 01-05-2023

Page 3 of 3

Compound	Conc	DL	Qual	Coeluters
PCB-201	ND	4.65		
PCB-202	ND	5.18		
PCB-203	-	-	C196	196
PCB-204	ND	4.82		
PCB-205	ND	2.95		
PCB-206	ND	5.79		
PCB-207	ND	3.99		
PCB-208	ND	3.66		
PCB-209	ND	4.81		

Internal Standards	% Rec	QC Limits	Qual
13C-PCB-1	85.7	5.00 - 145	
13C-PCB-3	73.8	5.00 - 145	
13C-PCB-4	93.6	5.00 - 145	
13C-PCB-15	71.6	5.00 - 145	
13C-PCB-19	81.4	5.00 - 145	
13C-PCB-37	78.3	5.00 - 145	
13C-PCB-54	92.0	5.00 - 145	
13C-PCB-77	88.4	10.0 - 145	
13C-PCB-81	85.0	10.0 - 145	
13C-PCB-104	77.1	10.0 - 145	
13C-PCB-105	93.5	10.0 - 145	
13C-PCB-114	91.7	10.0 - 145	
13C-PCB-118	95.0	10.0 - 145	
13C-PCB-123	84.4	10.0 - 145	
13C-PCB-126	95.1	10.0 - 145	
13C-PCB-155	84.9	10.0 - 145	
13C-PCB-156	92.5	10.0 - 145	
13C-PCB-157	93.9	10.0 - 145	
13C-PCB-167	89.7	10.0 - 145	
13C-PCB-169	98.5	10.0 - 145	
13C-PCB-188	79.7	10.0 - 145	
13C-PCB-189	98.2	10.0 - 145	
13C-PCB-202	81.8	10.0 - 145	
13C-PCB-205	82.5	10.0 - 145	
13C-PCB-206	75.1	10.0 - 145	
13C-PCB-208	73.0	10.0 - 145	
13C-PCB-209	73.8	10.0 - 145	

Cleanup Surrogates	% Rec	QC Limits	Qual
13C-PCB-28	90.7	5.00 - 145	
13C-PCB-111	80.5	10.0 - 145	
13C-PCB-178	80.3	10.0 - 145	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Coelution
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- * Result taken from dilution or reinjection

Analyst: 
Date: 1/6/2023

Reviewed By: 
Date: 1/6/2023

EPA Method 1668 PCBs



FAL ID: 14850-001-OPR
Client ID: OPR
Matrix: Aqueous
Batch No: X6325

Date Extracted: 01-04-2023
Date Received: NA
Amount: 1.000 L

ICal: DAILY209FAL4-1-5-23
GC Column: DB1MS
Units: ng/ml

Acquired: 01-05-2023

Compound	% Recovery	QC Limits	Qual	Internal Standards	% Recovery	QC Limits	Qual
PCB-1	111	60.0 - 135		13C-PCB-1	79.7	15.0 - 145	
PCB-3	107	60.0 - 135		13C-PCB-3	73.7	15.0 - 145	
PCB-4	116	60.0 - 135		13C-PCB-4	83.8	15.0 - 145	
PCB-15	94.4	60.0 - 135		13C-PCB-15	72.6	15.0 - 145	
PCB-19	110	60.0 - 135		13C-PCB-19	77.0	15.0 - 145	
PCB-37	110	60.0 - 135		13C-PCB-37	80.2	15.0 - 145	
PCB-54	106	60.0 - 135		13C-PCB-54	84.6	15.0 - 145	
PCB-77	116	60.0 - 135		13C-PCB-77	83.2	40.0 - 145	
PCB-81	104	60.0 - 135		13C-PCB-81	82.0	40.0 - 145	
PCB-104	109	60.0 - 135		13C-PCB-104	71.7	40.0 - 145	
PCB-105	101	60.0 - 135		13C-PCB-105	86.7	40.0 - 145	
PCB-114	104	60.0 - 135		13C-PCB-114	85.8	40.0 - 145	
PCB-118	106	60.0 - 135		13C-PCB-118	85.5	40.0 - 145	
PCB-123	103	60.0 - 135		13C-PCB-123	82.2	40.0 - 145	
PCB-126	106	60.0 - 135		13C-PCB-126	87.6	40.0 - 145	
PCB-155	110	60.0 - 135		13C-PCB-155	76.6	40.0 - 145	
PCB-156	102	60.0 - 135		13C-PCB-156	83.6	40.0 - 145	
PCB-157	104	60.0 - 135		13C-PCB-157	88.5	40.0 - 145	
PCB-167	102	60.0 - 135		13C-PCB-167	86.4	40.0 - 145	
PCB-169	108	60.0 - 135		13C-PCB-169	93.3	40.0 - 145	
PCB-188	109	60.0 - 135		13C-PCB-188	74.6	40.0 - 145	
PCB-189	108	60.0 - 135		13C-PCB-189	90.1	40.0 - 145	
PCB-202	112	60.0 - 135		13C-PCB-202	77.3	40.0 - 145	
PCB-205	102	60.0 - 135		13C-PCB-205	79.0	40.0 - 145	
PCB-206	101	60.0 - 135		13C-PCB-206	73.4	40.0 - 145	
PCB-208	105	60.0 - 135		13C-PCB-208	74.5	40.0 - 145	
PCB-209	98.2	60.0 - 135		13C-PCB-209	74.6	40.0 - 145	
				Cleanup Surrogate	% Recovery	QC limits	Qual
				13C-PCB-28	83.4	15.0 - 145	
				13C-PCB-111	77.9	40.0 - 145	
				13C-PCB-178	76.6	40.0 - 145	

Analyst: 

Date: 1/6/2023

Reviewed By: 

Date: 1/6/2023

EPA Method 1668 PCBs



FAL ID: 14850-001-SA
Client ID: M1001-SW-221209
Matrix: Aqueous
Batch No: X6325

Date Extracted: 01-04-2023
Date Received: 12-28-2022
Amount: 0.979 L

ICal: DAILY209FAL4-1-5-23
GC Column: DB1MS
Units: pg/L

Acquired: 01-05-2023
Total Conc: 10900

Page 1 of 3

Compound	Conc	DL	Qual	Coeluters	Compound	Conc	DL	Qual	Coeluters
PCB-1	ND	7.59			PCB-51	15.7	-	J	
PCB-2	ND	6.71			PCB-52	311	-	C	69
PCB-3	ND	8.19			PCB-53	37.7	-		
PCB-4	60.7	-			PCB-54	ND	6.89		
PCB-5	ND	12.0			PCB-55	ND	6.07		
PCB-6	29.3	-			PCB-56	187	-	C	60
PCB-7	ND	12.2			PCB-57	ND	6.51		
PCB-8	142	-			PCB-58	ND	6.64		
PCB-9	ND	11.9			PCB-59	-	-	C042	42
PCB-10	ND	11.3			PCB-60	-	-	C056	56
PCB-11	773	-			PCB-61	303	-	C	70
PCB-12	ND	13.3			PCB-62	ND	6.44		
PCB-13	ND	13.7			PCB-63	ND	6.26		
PCB-14	ND	12.0			PCB-64	-	-	C041	41/71/72
PCB-15	104	-			PCB-65	ND	6.79		
PCB-16	69.7	-			PCB-66	235	-	C	76
PCB-17	87.0	-			PCB-67	ND	6.41		
PCB-18	202	-			PCB-68	ND	6.07		
PCB-19	23.2	-			PCB-69	-	-	C052	52
PCB-20	262	-	C	21/33	PCB-70	-	-	C061	61
PCB-21	-	-	C020	20/33	PCB-71	-	-	C041	41/64/72
PCB-22	157	-			PCB-72	-	-	C041	41/64/71
PCB-23	ND	9.88			PCB-73	ND	6.11		
PCB-24	ND	6.05			PCB-74	116	-		
PCB-25	31.5	-			PCB-75	-	-	C048	48
PCB-26	48.2	-			PCB-76	-	-	C066	66
PCB-27	ND	6.00			PCB-77	41.9	-		
PCB-28	327	-			PCB-78	ND	9.81		
PCB-29	ND	11.1			PCB-79	ND	9.33		
PCB-30	ND	5.85			PCB-80	ND	5.53		
PCB-31	430	-			PCB-81	ND	8.52		
PCB-32	75.2	-			PCB-82	68.5	-		
PCB-33	-	-	C020	20/21	PCB-83	ND	12.8	C	112
PCB-34	ND	9.88			PCB-84	137	-	C	92
PCB-35	ND	13.9			PCB-85	65.6	-	C	116
PCB-36	ND	12.0			PCB-86	ND	15.3		
PCB-37	130	-			PCB-87	144	-	C	117/125
PCB-38	ND	11.4			PCB-88	47.8	-	C	91
PCB-39	ND	12.1			PCB-89	ND	14.9		
PCB-40	69.7	-			PCB-90	350	-	C	101
PCB-41	256	-	C	64/71/72	PCB-91	-	-	C088	88
PCB-42	107	-	C	59	PCB-92	-	-	C084	84
PCB-43	187	-	C	49	PCB-93	3.49	-		
PCB-44	280	-			PCB-94	ND	9.78		
PCB-45	45.7	-			PCB-95	279	-		
PCB-46	26.1	-			PCB-96	ND	6.84		
PCB-47	94.9	-			PCB-97	128	-		
PCB-48	66.3	-	C	75	PCB-98	ND	9.25	C	102
PCB-49	-	-	C043	43	PCB-99	125	-		
PCB-50	ND	8.64			PCB-100	ND	8.12		

EPA Method 1668 PCBs



FAL ID: 14850-001-SA
Client ID: M1001-SW-221209
Matrix: Aqueous
Batch No: X6325

Date Extracted: 01-04-2023
Date Received: 12-28-2022
Amount: 0.979 L

ICal: DAILY209FAL4-1-5-23
GC Column: DB1MS
Units: pg/L

Acquired: 01-05-2023

Page 2 of 3

Compound	Conc	DL	Qual	Coeluters	Compound	Conc	DL	Qual	Coeluters
PCB-101	-	-	C090	90	PCB-151	69.0	-		
PCB-102	-	-	C098	98	PCB-152	ND	5.89		
PCB-103	ND	8.24			PCB-153	296	-		
PCB-104	ND	6.73			PCB-154	ND	6.58		
PCB-105	166	-			PCB-155	ND	5.49		
PCB-106	374	-	C	118	PCB-156	56.9	-		
PCB-107	27.5	-	C	108	PCB-157	18.9	-	J	
PCB-108	-	-	C107	107	PCB-158	68.7	-	C	160
PCB-109	ND	10.3			PCB-159	ND	5.10		
PCB-110	404	-			PCB-160	-	-	C158	158
PCB-111	ND	10.3	C	115	PCB-161	-	-	C132	132
PCB-112	-	-	C083	83	PCB-162	-	-	C128	128
PCB-113	ND	12.1			PCB-163	-	-	C138	138/164
PCB-114	ND	5.17			PCB-164	-	-	C138	138/163
PCB-115	-	-	C111	111	PCB-165	-	-	C146	146
PCB-116	-	-	C085	85	PCB-166	ND	5.27		
PCB-117	-	-	C087	87/125	PCB-167	21.9	-		
PCB-118	-	-	C	106	PCB-168	ND	5.16		
PCB-119	ND	9.91			PCB-169	ND	6.27		
PCB-120	ND	9.69			PCB-170	105	-		
PCB-121	ND	7.05			PCB-171	34.5	-		
PCB-122	ND	5.18			PCB-172	26.5	-		
PCB-123	ND	4.97			PCB-173	ND	8.85		
PCB-124	8.11	-	J		PCB-174	95.9	-		
PCB-125	-	-	C087	87/117	PCB-175	130	-		
PCB-126	ND	7.54			PCB-176	12.8	-	J	
PCB-127	ND	5.46			PCB-177	56.7	-		
PCB-128	79.8	-	C	162	PCB-178	19.1	-	J	
PCB-129	34.9	-			PCB-179	37.5	-		
PCB-130	35.2	-			PCB-180	261	-		
PCB-131	ND	7.90	C	133	PCB-181	ND	7.67		
PCB-132	119	-	C	161	PCB-182	117	-	C	187
PCB-133	-	-	C131	131	PCB-183	65.0	-		
PCB-134	24.6	-	C	143	PCB-184	ND	5.23		
PCB-135	42.9	-			PCB-185	ND	7.62		
PCB-136	47.2	-			PCB-186	ND	5.57		
PCB-137	32.2	-			PCB-187	-	-	C182	182
PCB-138	428	-	C	163/164	PCB-188	ND	6.32		
PCB-139	277	-	C	149	PCB-189	ND	6.00		
PCB-140	ND	6.38			PCB-190	26.4	-		
PCB-141	91.2	-			PCB-191	ND	6.00		
PCB-142	ND	7.65			PCB-192	ND	6.18		
PCB-143	-	-	C134	134	PCB-193	20.1	-	J	
PCB-144	22.4	-			PCB-194	49.1	-		
PCB-145	ND	5.89			PCB-195	25.9	-		
PCB-146	49.4	-	C	165	PCB-196	88.5	-	C	203
PCB-147	ND	6.46			PCB-197	ND	7.76		
PCB-148	ND	7.98			PCB-198	82.6	-		
PCB-149	-	-	C139	139	PCB-199	67.8	-		
PCB-150	ND	5.60			PCB-200	ND	8.07		

EPA Method 1668 PCBs



FAL ID: 14850-001-SA
Client ID: M1001-SW-221209
Matrix: Aqueous
Batch No: X6325

Date Extracted: 01-04-2023
Date Received: 12-28-2022
Amount: 0.979 L

ICal: DAILY209FAL4-1-5-23
GC Column: DB1MS
Units: pg/L

Acquired: 01-05-2023

Page 3 of 3

Compound	Conc	DL	Qual	Coeluters
PCB-201	ND	7.84		
PCB-202	ND	8.75		
PCB-203	-	-	C196	196
PCB-204	ND	8.13		
PCB-205	ND	4.58		
PCB-206	38.0	-		
PCB-207	ND	4.95		
PCB-208	10.3	-	J	
PCB-209	13.7	-	J	

Internal Standards	% Rec	QC Limits	Qual
13C-PCB-1	78.1	5.00 - 145	
13C-PCB-3	68.2	5.00 - 145	
13C-PCB-4	89.2	5.00 - 145	
13C-PCB-15	69.9	5.00 - 145	
13C-PCB-19	77.4	5.00 - 145	
13C-PCB-37	78.5	5.00 - 145	
13C-PCB-54	81.0	5.00 - 145	
13C-PCB-77	86.5	10.0 - 145	
13C-PCB-81	85.2	10.0 - 145	
13C-PCB-104	71.0	10.0 - 145	
13C-PCB-105	88.0	10.0 - 145	
13C-PCB-114	86.0	10.0 - 145	
13C-PCB-118	85.3	10.0 - 145	
13C-PCB-123	84.3	10.0 - 145	
13C-PCB-126	90.6	10.0 - 145	
13C-PCB-155	74.2	10.0 - 145	
13C-PCB-156	80.4	10.0 - 145	
13C-PCB-157	86.6	10.0 - 145	
13C-PCB-167	83.8	10.0 - 145	
13C-PCB-169	90.8	10.0 - 145	
13C-PCB-188	70.6	10.0 - 145	
13C-PCB-189	85.7	10.0 - 145	
13C-PCB-202	72.0	10.0 - 145	
13C-PCB-205	76.9	10.0 - 145	
13C-PCB-206	74.2	10.0 - 145	
13C-PCB-208	74.9	10.0 - 145	
13C-PCB-209	75.8	10.0 - 145	

Cleanup Surrogates	% Rec	QC Limits	Qual
13C-PCB-28	91.8	5.00 - 145	
13C-PCB-111	83.1	10.0 - 145	
13C-PCB-178	75.8	10.0 - 145	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Coelution
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- * Result taken from dilution or reinjection

Analyst: 
Date: 1/6/2023

Reviewed By: 
Date: 1/6/2023

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER <u>Frontier</u>	
PROJECT NAME/NO. 212185	PO # D-85
REMARKS Please Email Results 14850 000	

Page # 1 of 1

TURNAROUND TIME <u>Standard TAT</u> RUSH Rush charges authorized by: _____
SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions

ANALYSES REQUESTED															
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins/Furans	EPH	VPH	PCB Congeners	D/F 1613					Notes
M1001-SW-221209		12/9/12	0930	water	2				x	x					* see attach

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michael Erdahl	Friedman & Bruya	12/17/12	1011
Received by:	Kathy Zipp	Frontier	12/28/12	1030
Relinquished by:				
Received by:				

Michael Erdahl

From: "Lynn Green" <lynng@evren-nw.com>
Date: Tuesday, December 27, 2022 10:13 AM
To: "Michael Erdahl" <merdahl@friedmanandbruya.com>
Cc: "Tori Bennett" <torib@evren-nw.com>; "Evan Bruggeman" <evanb@evren-nw.com>
Subject: RE: 1355-19001-02

We need the following Dioxins and Furans:

- 2,3,7,8-TCDD/TCDF,
- 1,2,3,7,8-PeCDD/PeCDF,
- 1,2,3,4,7,8-HxCDD/HxCDF,
- 1,2,3,6,7,8-HxCDD/HxCDF,
- 1,2,3,7,8,9-HxCDD/HxCDF,
- 2,3,4,6,7,8-HxCDF,
- 1,2,3,4,6,7,8-HpCDD/HpCDF, and
- 1,2,3,4,7,8,9-HpCDF

You previously reported MRLS between 0.000000304 - 0.000000732 ug/L for these constituents. Which method was that?

Lynn D. Green, Ph. D.
 P.G./R.G./L.G./C.E.G./L.E.G.
 Principal Engineering Geologist / Hydrologist
 EVREN Northwest, Inc
 Environmental and Natural Resource Consulting
 ><))))> ☺ ><))))> ☺ ><))))> ☺ ><))))> ☺

From: Michael Erdahl <merdahl@friedmanandbruya.com>
Sent: Tuesday, December 27, 2022 10:10 AM
To: Lynn Green <lynng@evren-nw.com>
Cc: Tori Bennett <torib@evren-nw.com>; Evan Bruggeman <evanb@evren-nw.com>
Subject: Re: 1355-19001-02

The list was provided with this one.

- 1) Do you only want 2,3,7,8-TCDD eq only for both of these samples?
- 2) Which method--EPA 1613 or 8290?

Michael Erdahl
 Senior Project Manager
 Friedman and Bruya
 (206) 285-8282 x 247
 (206) 446-5926 (cell)

This message is private or privileged. If you are not the person or party for whom this message is intended, we apologize for the mistake and please forward us a note that this message was received in

12/27/2022

Frontier Analytical Laboratory

Sample Login Form

FAL Project ID: **14850**

Client:	Friedman & Bruya, Inc.
Client Project ID:	212185
Date Received:	12/28/2022
Time Received:	10:30 am
Received By:	KZ
Logged In By:	KZ
# of Samples Received:	1
Duplicates:	0
Storage Location:	R-4

Method of Delivery:	Fed-Ex
Tracking Number:	813795597453
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	0
Cooling Method	Blue Ice/Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test aqueous sample for residual Chlorine	Yes
Sodium Thiosulfate Added	No
Adequate Sample Volume	Yes
Appropriate Sample Container	Yes
pH Range of Aqueous Sample	Between 4 and 9
Anomalies or additional comments:	

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

January 26, 2023

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included is the amended report from the testing of material submitted on November 23, 2022 from the 1355-19001-02, F&BI 211352 project. Per your request, task number has been updated to -02.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Neil Woller, Paul Trone, Evan Bruggeman
ENW0124R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

January 24, 2023

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the additional results from the testing of material submitted on November 23, 2022 from the 1355-19001-02, F&BI 211352 project. There is 1 page included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Neil Woller, Paul Trone, Evan Bruggeman
ENW0124R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 23, 2022 by Friedman & Bruya, Inc. from the Evren Northwest 1355-19001-02, F&BI 211352 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

211352 -01

Evren Northwest

M1001-SW-221122

Sample M1001-SW-221122 was sent to Frontier Analytical for dioxin and furan and PCB congener analyses. The report is enclosed.



Test Report



January 12, 2023

Frontier Analytical Laboratory Project: 14849

Mr. Michael Erdahl
Friedman and Bruya, Inc.
3012 16th Ave. W
Seattle, WA 98119

Dear Mr. Erdahl,

The following results are associated with Frontier Analytical Laboratory project **14849**. This corresponds to your project number **211352** and purchase order number **D-85**. One aqueous sample was received on 12/28/2022 in good condition. This sample was extracted and analyzed by EPA Method 1613 for tetra through octa chlorinated dibenzo dioxins and furans. In addition, this sample was extracted and analyzed by EPA Method 1668 for all 209 polychlorinated biphenyls (PCBs). The Toxic Equivalency (TEQ) for your sample has been calculated using the 2005 World Health Organization's (WHO's) toxic equivalency factors (TEFs).

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains our sample tracking log and the analytical results. The Sample Receipt section contains your chain of custody, our sample login form and a sample photo. The enclosed results and electronic data deliverable (EDD) are specifically for the sample referenced in this report only. These results meet all NELAP requirements and shall not be reproduced except in full. Frontier Analytical Laboratory's State of Oregon NELAP certificate number is **4041**, our State of California ELAP certificate number is **2934** and our State of Washington certificate number is **C844**. This report along with the associated EDD has been emailed to you. A hardcopy of this report will not be sent to you unless specifically requested.

If you have any questions regarding project **14849**, please feel free to contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

A handwritten signature in black ink, appearing to read "Bradley B. Silverbush".

Bradley B. Silverbush
Laboratory Director

FRONTIER ANALYTICAL LABORATORY

5172 Hillside Circle * El Dorado Hills, CA 95762

Tel (916) 934-0900 * Fax (916) 934-0999

www.frontieranalytical.com

Frontier Analytical Laboratory

Sample Tracking Log

FAL Project ID: **14849**

Received on: **12/28/2022**

Project Due: **01/20/2023** Storage: **R-4**

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
14849-001-SA	0	211352	M1001-SW-221122	EPA 1613 D/F	Aqueous	11/22/2022	08:40 am	11/22/2023
14849-001-SA	0	211352	M1001-SW-221122	EPA 1668 PCB	Aqueous	11/22/2022	08:40 am	11/22/2023

EPA Method 1613 PCDD/F



FAL ID: 14849-001-MB
Client ID: Method Blank
Matrix: Aqueous
Batch No: X6329

Date Extracted: 01-06-2023
Date Received: NA
Amount: 1.00 L

ICal: PCDDFAL3-4-29-22
GC Column: DB5MS
Units: pg/L

Acquired: 01-11-2023
2005 WHO TEQ: 0.0

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.866		-	0.640				
1,2,3,7,8-PeCDD	ND	1.36		-	0.783				
1,2,3,4,7,8-HxCDD	ND	1.90		-	1.30				
1,2,3,6,7,8-HxCDD	ND	1.99		-	1.39	Total TCDD	ND	0.866	
1,2,3,7,8,9-HxCDD	ND	1.80		-	1.28	Total PeCDD	ND	1.36	
1,2,3,4,6,7,8-HpCDD	ND	2.19		-	1.17	Total HxCDD	ND	1.99	
OCDD	ND	2.95		-	2.00	Total HpCDD	ND	2.19	
2,3,7,8-TCDF	ND	0.965		-	0.624				
1,2,3,7,8-PeCDF	ND	1.46		-	0.751				
2,3,4,7,8-PeCDF	ND	1.47		-	0.793				
1,2,3,4,7,8-HxCDF	ND	0.961		-	0.781				
1,2,3,6,7,8-HxCDF	ND	0.992		-	0.803				
2,3,4,6,7,8-HxCDF	ND	1.08		-	0.827				
1,2,3,7,8,9-HxCDF	ND	1.50		-	0.973	Total TCDF	ND	0.965	
1,2,3,4,6,7,8-HpCDF	ND	1.52		-	0.773	Total PeCDF	ND	1.47	
1,2,3,4,7,8,9-HpCDF	ND	2.23		-	0.978	Total HxCDF	ND	1.50	
OCDF	ND	3.25		-	1.71	Total HpCDF	ND	2.23	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	78.1	25.0 - 164	
13C-1,2,3,7,8-PeCDD	67.1	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	81.9	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	81.9	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	76.2	23.0 - 140	
13C-OCDD	68.8	17.0 - 157	
13C-2,3,7,8-TCDF	78.9	24.0 - 169	
13C-1,2,3,7,8-PeCDF	73.8	24.0 - 185	
13C-2,3,4,7,8-PeCDF	75.6	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	77.7	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	80.2	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	77.0	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	74.8	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	76.7	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	69.3	26.0 - 138	
13C-OCDF	67.7	17.0 - 157	

Cleanup Surrogate

37Cl-2,3,7,8-TCDD 84.0 35.0 - 197

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- * Result taken from dilution or reinjection

Analyst: 

Date: 1/12/2023

Reviewed By: 

Date: 1/12/2023

EPA Method 1613 PCDD/F



FAL ID: 14849-001-OPR
Client ID: OPR
Matrix: Aqueous
Batch No: X6329

Date Extracted: 01-06-2023
Date Received: NA
Amount: 1.000 L

ICal: PCDDFAL3-4-29-22
GC Column: DB5MS
Units: ng/ml

Acquired: 01-11-2023
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	8.52	6.70 - 15.8	
1,2,3,7,8-PeCDD	44.6	35.0 - 71.0	
1,2,3,4,7,8-HxCDD	45.8	35.0 - 82.0	
1,2,3,6,7,8-HxCDD	47.9	38.0 - 67.0	
1,2,3,7,8,9-HxCDD	44.4	32.0 - 81.0	
1,2,3,4,6,7,8-HpCDD	46.7	35.0 - 70.0	
OCDD	98.0	78.0 - 144	
2,3,7,8-TCDF	8.42	7.50 - 15.8	
1,2,3,7,8-PeCDF	45.0	40.0 - 67.0	
2,3,4,7,8-PeCDF	45.4	34.0 - 80.0	
1,2,3,4,7,8-HxCDF	45.3	36.0 - 67.0	
1,2,3,6,7,8-HxCDF	46.2	42.0 - 65.0	
2,3,4,6,7,8-HxCDF	46.5	35.0 - 78.0	
1,2,3,7,8,9-HxCDF	46.1	39.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	48.5	41.0 - 61.0	
1,2,3,4,7,8,9-HpCDF	46.7	39.0 - 69.0	
OCDF	92.8	63.0 - 170	
Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	83.8	20.0 - 175	
13C-1,2,3,7,8-PeCDD	75.6	21.0 - 227	
13C-1,2,3,4,7,8-HxCDD	79.1	21.0 - 193	
13C-1,2,3,6,7,8-HxCDD	79.4	25.0 - 163	
13C-1,2,3,4,6,7,8-HpCDD	70.7	26.0 - 166	
13C-OCDD	69.4	13.0 - 198	
13C-2,3,7,8-TCDF	87.6	22.0 - 152	
13C-1,2,3,7,8-PeCDF	78.6	21.0 - 192	
13C-2,3,4,7,8-PeCDF	81.8	13.0 - 328	
13C-1,2,3,4,7,8-HxCDF	73.9	19.0 - 202	
13C-1,2,3,6,7,8-HxCDF	75.0	21.0 - 159	
13C-2,3,4,6,7,8-HxCDF	73.7	22.0 - 176	
13C-1,2,3,7,8,9-HxCDF	71.3	17.0 - 205	
13C-1,2,3,4,6,7,8-HpCDF	69.2	21.0 - 158	
13C-1,2,3,4,7,8,9-HpCDF	65.6	20.0 - 186	
13C-OCDF	68.9	13.0 - 198	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	92.4	31.0 - 191	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- * Result taken from dilution or reinjection

Analyst: 

Date: 1/12/2023

Reviewed By: 

Date: 1/12/2023

EPA Method 1613 PCDD/F



FAL ID: 14849-001-SA
Client ID: M1001-SW-221122
Matrix: Aqueous
Batch No: X6329

Date Extracted: 01-06-2023
Date Received: 12-28-2022
Amount: 0.949 L

ICal: PCDDFAL3-4-29-22
GC Column: DB5MS
Units: pg/L

Acquired: 01-11-2023
2005 WHO TEQ: 0.110

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	1.31		-	0.640				
1,2,3,7,8-PeCDD	ND	3.41		-	0.783				
1,2,3,4,7,8-HxCDD	ND	3.10		-	1.30				
1,2,3,6,7,8-HxCDD	ND	3.20		-	1.39	Total TCDD	5.26	-	
1,2,3,7,8,9-HxCDD	ND	2.91		-	1.28	Total PeCDD	12.3	-	J
1,2,3,4,6,7,8-HpCDD	10.4	-	J	0.104	1.17	Total HxCDD	15.8	-	J
OCDD	19.0	-	J	0.00570	2.00	Total HpCDD	18.6	-	J
2,3,7,8-TCDF	ND	1.33		-	0.624				
1,2,3,7,8-PeCDF	ND	2.40		-	0.751				
2,3,4,7,8-PeCDF	ND	2.74		-	0.793				
1,2,3,4,7,8-HxCDF	ND	2.56		-	0.781				
1,2,3,6,7,8-HxCDF	ND	2.70		-	0.803				
2,3,4,6,7,8-HxCDF	ND	2.74		-	0.827				
1,2,3,7,8,9-HxCDF	ND	3.77		-	0.973	Total TCDF	16.7	-	
1,2,3,4,6,7,8-HpCDF	ND	2.83		-	0.773	Total PeCDF	ND	2.74	
1,2,3,4,7,8,9-HpCDF	ND	5.16		-	0.978	Total HxCDF	ND	3.77	
OCDF	ND	8.43		-	1.71	Total HpCDF	ND	5.16	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	74.0	25.0 - 164	
13C-1,2,3,7,8-PeCDD	67.8	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	81.3	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	84.9	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	72.7	23.0 - 140	
13C-OCDD	56.3	17.0 - 157	
13C-2,3,7,8-TCDF	77.5	24.0 - 169	
13C-1,2,3,7,8-PeCDF	75.9	24.0 - 185	
13C-2,3,4,7,8-PeCDF	73.1	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	76.7	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	78.0	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	74.9	28.0 - 136	
13C-1,2,3,7,8,9-HxCDF	66.3	29.0 - 147	
13C-1,2,3,4,6,7,8-HpCDF	71.5	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	57.1	26.0 - 138	
13C-OCDF	48.9	17.0 - 157	

Cleanup Surrogate

37Cl-2,3,7,8-TCDD 93.7 35.0 - 197

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- * Result taken from dilution or reinjection

Analyst: 

Date: 1/12/2023

Reviewed By: 

Date: 1/12/2023

EPA Method 1668 PCBs



FAL ID: 14849-001-MB
Client ID: Method Blank
Matrix: Aqueous
Batch No: X6325

Date Extracted: 01-04-2023
Date Received: NA
Amount: 1.000 L

ICal: DAILY209FAL4-1-5-23
GC Column: DB1MS
Units: pg/L

Acquired: 01-05-2023
Total Conc: 0.0

Page 1 of 3

Compound	Conc	DL	Qual	Coeluters	Compound	Conc	DL	Qual	Coeluters
PCB-1	ND	3.61			PCB-51	ND	5.82		
PCB-2	ND	5.62			PCB-52	ND	5.78	C	69
PCB-3	ND	7.07			PCB-53	ND	6.11		
PCB-4	ND	7.71			PCB-54	ND	4.85		
PCB-5	ND	9.59			PCB-55	ND	4.27		
PCB-6	ND	9.58			PCB-56	ND	7.88	C	60
PCB-7	ND	9.75			PCB-57	ND	4.58		
PCB-8	ND	9.68			PCB-58	ND	4.68		
PCB-9	ND	9.53			PCB-59	-	-	C042	42
PCB-10	ND	9.09			PCB-60	-	-	C056	56
PCB-11	ND	11.1			PCB-61	ND	4.90	C	70
PCB-12	ND	10.7			PCB-62	ND	4.53		
PCB-13	ND	11.0			PCB-63	ND	4.41		
PCB-14	ND	9.60			PCB-64	-	-	C041	41/71/72
PCB-15	ND	15.3			PCB-65	ND	4.78		
PCB-16	ND	6.30			PCB-66	ND	4.24	C	76
PCB-17	ND	7.06			PCB-67	ND	4.51		
PCB-18	ND	7.73			PCB-68	ND	4.28		
PCB-19	ND	8.18			PCB-69	-	-	C052	52
PCB-20	ND	12.5	C	21/33	PCB-70	-	-	C061	61
PCB-21	-	-	C020	20/33	PCB-71	-	-	C041	41/64/72
PCB-22	ND	11.7			PCB-72	-	-	C041	41/64/71
PCB-23	ND	11.0			PCB-73	ND	4.30		
PCB-24	ND	5.27			PCB-74	ND	4.53		
PCB-25	ND	12.0			PCB-75	-	-	C048	48
PCB-26	ND	12.3			PCB-76	-	-	C066	66
PCB-27	ND	5.24			PCB-77	ND	9.55		
PCB-28	ND	9.80			PCB-78	ND	7.97		
PCB-29	ND	12.4			PCB-79	ND	7.58		
PCB-30	ND	5.10			PCB-80	ND	3.90		
PCB-31	ND	12.9			PCB-81	ND	6.93		
PCB-32	ND	6.27			PCB-82	ND	10.6		
PCB-33	-	-	C020	20/21	PCB-83	ND	7.99	C	112
PCB-34	ND	11.0			PCB-84	ND	9.46	C	92
PCB-35	ND	15.6			PCB-85	ND	7.19	C	116
PCB-36	ND	13.4			PCB-86	ND	9.55		
PCB-37	ND	14.1			PCB-87	ND	7.01	C	117/125
PCB-38	ND	12.7			PCB-88	ND	7.30	C	91
PCB-39	ND	13.5			PCB-89	ND	9.28		
PCB-40	ND	7.60			PCB-90	ND	8.09	C	101
PCB-41	ND	4.87	C	64/71/72	PCB-91	-	-	C088	88
PCB-42	ND	5.47	C	59	PCB-92	-	-	C084	84
PCB-43	ND	6.25	C	49	PCB-93	ND	8.20		
PCB-44	ND	7.21			PCB-94	ND	8.44		
PCB-45	ND	6.85			PCB-95	ND	8.04		
PCB-46	ND	7.34			PCB-96	ND	5.90		
PCB-47	ND	6.09			PCB-97	ND	9.56		
PCB-48	ND	4.82	C	75	PCB-98	ND	7.98	C	102
PCB-49	-	-	C043	43	PCB-99	ND	6.87		
PCB-50	ND	6.09			PCB-100	ND	7.01		

EPA Method 1668 PCBs



FAL ID: 14849-001-MB
Client ID: Method Blank
Matrix: Aqueous
Batch No: X6325

Date Extracted: 01-04-2023
Date Received: NA
Amount: 1.000 L

ICal: DAILY209FAL4-1-5-23
GC Column: DB1MS
Units: pg/L

Acquired: 01-05-2023

Page 2 of 3

Compound	Conc	DL	Qual	Coeluters	Compound	Conc	DL	Qual	Coeluters
PCB-101	-	-	C090	90	PCB-151	ND	8.70		
PCB-102	-	-	C098	98	PCB-152	ND	5.04		
PCB-103	ND	7.11			PCB-153	ND	6.47		
PCB-104	ND	5.81			PCB-154	ND	5.62		
PCB-105	ND	6.46			PCB-155	ND	4.70		
PCB-106	ND	6.62	C	118	PCB-156	ND	6.36		
PCB-107	ND	6.06	C	108	PCB-157	ND	6.92		
PCB-108	-	-	C107	107	PCB-158	ND	5.91	C	160
PCB-109	ND	6.43			PCB-159	ND	6.03		
PCB-110	ND	6.07			PCB-160	-	-	C158	158
PCB-111	ND	6.43	C	115	PCB-161	-	-	C132	132
PCB-112	-	-	C083	83	PCB-162	-	-	C128	128
PCB-113	ND	7.51			PCB-163	-	-	C138	138/164
PCB-114	ND	6.23			PCB-164	-	-	C138	138/163
PCB-115	-	-	C111	111	PCB-165	-	-	C146	146
PCB-116	-	-	C085	85	PCB-166	ND	6.24		
PCB-117	-	-	C087	87/125	PCB-167	ND	6.52		
PCB-118	-	-	C	106	PCB-168	ND	6.10		
PCB-119	ND	6.17			PCB-169	ND	7.87		
PCB-120	ND	6.04			PCB-170	ND	7.58		
PCB-121	ND	6.08			PCB-171	ND	6.80		
PCB-122	ND	6.16			PCB-172	ND	7.51		
PCB-123	ND	5.78			PCB-173	ND	7.71		
PCB-124	ND	3.03			PCB-174	ND	6.69		
PCB-125	-	-	C087	87/117	PCB-175	ND	6.67		
PCB-126	ND	9.73			PCB-176	ND	4.88		
PCB-127	ND	6.49			PCB-177	ND	7.20		
PCB-128	ND	7.17	C	162	PCB-178	ND	6.85		
PCB-129	ND	9.51			PCB-179	ND	4.77		
PCB-130	ND	8.15			PCB-180	ND	6.97		
PCB-131	ND	9.35	C	133	PCB-181	ND	6.68		
PCB-132	ND	7.36	C	161	PCB-182	ND	5.97	C	187
PCB-133	-	-	C131	131	PCB-183	ND	5.96		
PCB-134	ND	9.36	C	143	PCB-184	ND	4.56		
PCB-135	ND	8.78			PCB-185	ND	6.64		
PCB-136	ND	5.05			PCB-186	ND	4.86		
PCB-137	ND	9.11			PCB-187	-	-	C182	182
PCB-138	ND	6.61	C	163/164	PCB-188	ND	5.83		
PCB-139	ND	7.65	C	149	PCB-189	ND	4.90		
PCB-140	ND	7.55			PCB-190	ND	5.48		
PCB-141	ND	8.15			PCB-191	ND	5.22		
PCB-142	ND	9.05			PCB-192	ND	5.39		
PCB-143	-	-	C134	134	PCB-193	ND	5.00		
PCB-144	ND	8.13			PCB-194	ND	3.58		
PCB-145	ND	5.04			PCB-195	ND	3.97		
PCB-146	ND	6.78	C	165	PCB-196	ND	6.28	C	203
PCB-147	ND	7.65			PCB-197	ND	4.60		
PCB-148	ND	6.82			PCB-198	ND	7.55		
PCB-149	-	-	C139	139	PCB-199	ND	6.20		
PCB-150	ND	4.79			PCB-200	ND	4.78		

EPA Method 1668 PCBs



FAL ID: 14849-001-MB
Client ID: Method Blank
Matrix: Aqueous
Batch No: X6325

Date Extracted: 01-04-2023
Date Received: NA
Amount: 1.000 L

ICal: DAILY209FAL4-1-5-23
GC Column: DB1MS
Units: pg/L

Acquired: 01-05-2023

Page 3 of 3

Compound	Conc	DL	Qual	Coeluters
PCB-201	ND	4.65		
PCB-202	ND	5.18		
PCB-203	-	-	C196	196
PCB-204	ND	4.82		
PCB-205	ND	2.95		
PCB-206	ND	5.79		
PCB-207	ND	3.99		
PCB-208	ND	3.66		
PCB-209	ND	4.81		

Internal Standards	% Rec	QC Limits	Qual
13C-PCB-1	85.7	5.00 - 145	
13C-PCB-3	73.8	5.00 - 145	
13C-PCB-4	93.6	5.00 - 145	
13C-PCB-15	71.6	5.00 - 145	
13C-PCB-19	81.4	5.00 - 145	
13C-PCB-37	78.3	5.00 - 145	
13C-PCB-54	92.0	5.00 - 145	
13C-PCB-77	88.4	10.0 - 145	
13C-PCB-81	85.0	10.0 - 145	
13C-PCB-104	77.1	10.0 - 145	
13C-PCB-105	93.5	10.0 - 145	
13C-PCB-114	91.7	10.0 - 145	
13C-PCB-118	95.0	10.0 - 145	
13C-PCB-123	84.4	10.0 - 145	
13C-PCB-126	95.1	10.0 - 145	
13C-PCB-155	84.9	10.0 - 145	
13C-PCB-156	92.5	10.0 - 145	
13C-PCB-157	93.9	10.0 - 145	
13C-PCB-167	89.7	10.0 - 145	
13C-PCB-169	98.5	10.0 - 145	
13C-PCB-188	79.7	10.0 - 145	
13C-PCB-189	98.2	10.0 - 145	
13C-PCB-202	81.8	10.0 - 145	
13C-PCB-205	82.5	10.0 - 145	
13C-PCB-206	75.1	10.0 - 145	
13C-PCB-208	73.0	10.0 - 145	
13C-PCB-209	73.8	10.0 - 145	

Cleanup Surrogates	% Rec	QC Limits	Qual
13C-PCB-28	90.7	5.00 - 145	
13C-PCB-111	80.5	10.0 - 145	
13C-PCB-178	80.3	10.0 - 145	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Coelution
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- * Result taken from dilution or reinjection

Analyst: 
Date: 1/6/2023

Reviewed By: 
Date: 1/6/2023

EPA Method 1668 PCBs



FAL ID: 14849-001-OPR
Client ID: OPR
Matrix: Aqueous
Batch No: X6325

Date Extracted: 01-04-2023
Date Received: NA
Amount: 1.000 L

ICal: DAILY209FAL4-1-5-23
GC Column: DB1MS
Units: ng/ml

Acquired: 01-05-2023

Compound	% Recovery	QC Limits	Qual	Internal Standards	% Recovery	QC Limits	Qual
PCB-1	111	60.0 - 135		13C-PCB-1	79.7	15.0 - 145	
PCB-3	107	60.0 - 135		13C-PCB-3	73.7	15.0 - 145	
PCB-4	116	60.0 - 135		13C-PCB-4	83.8	15.0 - 145	
PCB-15	94.4	60.0 - 135		13C-PCB-15	72.6	15.0 - 145	
PCB-19	110	60.0 - 135		13C-PCB-19	77.0	15.0 - 145	
PCB-37	110	60.0 - 135		13C-PCB-37	80.2	15.0 - 145	
PCB-54	106	60.0 - 135		13C-PCB-54	84.6	15.0 - 145	
PCB-77	116	60.0 - 135		13C-PCB-77	83.2	40.0 - 145	
PCB-81	104	60.0 - 135		13C-PCB-81	82.0	40.0 - 145	
PCB-104	109	60.0 - 135		13C-PCB-104	71.7	40.0 - 145	
PCB-105	101	60.0 - 135		13C-PCB-105	86.7	40.0 - 145	
PCB-114	104	60.0 - 135		13C-PCB-114	85.8	40.0 - 145	
PCB-118	106	60.0 - 135		13C-PCB-118	85.5	40.0 - 145	
PCB-123	103	60.0 - 135		13C-PCB-123	82.2	40.0 - 145	
PCB-126	106	60.0 - 135		13C-PCB-126	87.6	40.0 - 145	
PCB-155	110	60.0 - 135		13C-PCB-155	76.6	40.0 - 145	
PCB-156	102	60.0 - 135		13C-PCB-156	83.6	40.0 - 145	
PCB-157	104	60.0 - 135		13C-PCB-157	88.5	40.0 - 145	
PCB-167	102	60.0 - 135		13C-PCB-167	86.4	40.0 - 145	
PCB-169	108	60.0 - 135		13C-PCB-169	93.3	40.0 - 145	
PCB-188	109	60.0 - 135		13C-PCB-188	74.6	40.0 - 145	
PCB-189	108	60.0 - 135		13C-PCB-189	90.1	40.0 - 145	
PCB-202	112	60.0 - 135		13C-PCB-202	77.3	40.0 - 145	
PCB-205	102	60.0 - 135		13C-PCB-205	79.0	40.0 - 145	
PCB-206	101	60.0 - 135		13C-PCB-206	73.4	40.0 - 145	
PCB-208	105	60.0 - 135		13C-PCB-208	74.5	40.0 - 145	
PCB-209	98.2	60.0 - 135		13C-PCB-209	74.6	40.0 - 145	
				Cleanup Surrogate	% Recovery	QC limits	Qual
				13C-PCB-28	83.4	15.0 - 145	
				13C-PCB-111	77.9	40.0 - 145	
				13C-PCB-178	76.6	40.0 - 145	

Analyst: 

Date: 1/6/2023

Reviewed By: 

Date: 1/6/2023

EPA Method 1668 PCBs



FAL ID: 14849-001-SA
Client ID: M1001-SW-221122
Matrix: Aqueous
Batch No: X6325

Date Extracted: 01-04-2023
Date Received: 12-28-2022
Amount: 0.979 L

ICal: DAILY209FAL4-1-5-23
GC Column: DB1MS
Units: pg/L

Acquired: 01-05-2023
Total Conc: 1440

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Compound	Conc	DL	Qual	Coeluters	Compound	Conc	DL	Qual	Coeluters
PCB-1	ND	5.49			PCB-51	15.8	-	J	
PCB-2	ND	7.87			PCB-52	62.8	-	C	69
PCB-3	ND	9.22			PCB-53	ND	10.0		
PCB-4	63.4	-			PCB-54	ND	7.94		
PCB-5	22.1	-			PCB-55	ND	6.99		
PCB-6	ND	8.33			PCB-56	ND	14.2	C	60
PCB-7	ND	8.48			PCB-57	ND	7.50		
PCB-8	44.1	-			PCB-58	ND	7.66		
PCB-9	ND	8.29			PCB-59	-	-	C042	42
PCB-10	ND	7.90			PCB-60	-	-	C056	56
PCB-11	309	-			PCB-61	50.2	-	C	70
PCB-12	ND	9.28			PCB-62	ND	7.42		
PCB-13	ND	9.57			PCB-63	ND	7.21		
PCB-14	ND	8.34			PCB-64	-	-	C041	41/71/72
PCB-15	ND	11.4			PCB-65	ND	7.82		
PCB-16	13.5	-	J		PCB-66	25.3	-	C	76
PCB-17	26.5	-			PCB-67	ND	7.38		
PCB-18	75.0	-			PCB-68	ND	7.00		
PCB-19	15.8	-	J		PCB-69	-	-	C052	52
PCB-20	42.2	-	C	21/33	PCB-70	-	-	C061	61
PCB-21	-	-	C020	20/33	PCB-71	-	-	C041	41/64/72
PCB-22	28.1	-			PCB-72	-	-	C041	41/64/71
PCB-23	ND	4.42			PCB-73	ND	7.04		
PCB-24	ND	4.27			PCB-74	20.6	-		
PCB-25	ND	4.79			PCB-75	-	-	C048	48
PCB-26	9.50	-	J		PCB-76	-	-	C066	66
PCB-27	ND	4.24			PCB-77	ND	8.25		
PCB-28	45.9	-			PCB-78	ND	7.07		
PCB-29	ND	4.95			PCB-79	ND	6.72		
PCB-30	ND	4.14			PCB-80	ND	6.37		
PCB-31	43.2	-			PCB-81	ND	6.36		
PCB-32	26.2	-			PCB-82	ND	9.65		
PCB-33	-	-	C020	20/21	PCB-83	ND	7.25	C	112
PCB-34	ND	5.97			PCB-84	22.3	-	C	92
PCB-35	ND	6.24			PCB-85	ND	6.53	C	116
PCB-36	ND	5.37			PCB-86	ND	8.67		
PCB-37	15.6	-	J		PCB-87	20.9	-	C	117/125
PCB-38	ND	5.08			PCB-88	ND	6.29	C	91
PCB-39	ND	5.41			PCB-89	ND	8.43		
PCB-40	ND	12.4			PCB-90	51.8	-	C	101
PCB-41	29.2	-	C	64/71/72	PCB-91	-	-	C088	88
PCB-42	ND	8.95	C	59	PCB-92	-	-	C084	84
PCB-43	26.8	-	C	49	PCB-93	ND	7.06		
PCB-44	46.3	-			PCB-94	ND	7.27		
PCB-45	ND	11.2			PCB-95	40.6	-		
PCB-46	ND	12.0			PCB-96	ND	5.08		
PCB-47	32.5	-			PCB-97	21.6	-		
PCB-48	ND	7.89	C	75	PCB-98	ND	6.87	C	102
PCB-49	-	-	C043	43	PCB-99	21.3	-		
PCB-50	ND	9.96			PCB-100	ND	6.03		

EPA Method 1668 PCBs



FAL ID: 14849-001-SA
Client ID: M1001-SW-221122
Matrix: Aqueous
Batch No: X6325

Date Extracted: 01-04-2023
Date Received: 12-28-2022
Amount: 0.979 L

ICal: DAILY209FAL4-1-5-23
GC Column: DB1MS
Units: pg/L

Acquired: 01-05-2023

Page 2 of 3

Compound	Conc	DL	Qual	Coeluters	Compound	Conc	DL	Qual	Coeluters
PCB-101	-	-	C090	90	PCB-151	ND	8.97		
PCB-102	-	-	C098	98	PCB-152	ND	5.15		
PCB-103	ND	6.12			PCB-153	20.7	-		
PCB-104	ND	5.00			PCB-154	ND	5.75		
PCB-105	18.9	-	J		PCB-155	ND	4.80		
PCB-106	46.1	-	C	118	PCB-156	ND	6.52		
PCB-107	ND	8.14	C	108	PCB-157	ND	7.02		
PCB-108	-	-	C107	107	PCB-158	ND	6.09	C	160
PCB-109	ND	5.83			PCB-159	ND	6.22		
PCB-110	45.3	-			PCB-160	-	-	C158	158
PCB-111	ND	5.84	C	115	PCB-161	-	-	C132	132
PCB-112	-	-	C083	83	PCB-162	-	-	C128	128
PCB-113	ND	6.82			PCB-163	-	-	C138,J	138/164
PCB-114	ND	8.23			PCB-164	-	-	C138,J	138/163
PCB-115	-	-	C111	111	PCB-165	-	-	C146	146
PCB-116	-	-	C085	85	PCB-166	ND	6.43		
PCB-117	-	-	C087	87/125	PCB-167	ND	6.75		
PCB-118	-	-	C	106	PCB-168	ND	6.30		
PCB-119	ND	5.61			PCB-169	ND	8.28		
PCB-120	ND	5.48			PCB-170	ND	7.57		
PCB-121	ND	5.23			PCB-171	ND	6.79		
PCB-122	ND	8.27			PCB-172	ND	7.50		
PCB-123	ND	8.57			PCB-173	ND	7.70		
PCB-124	ND	8.53			PCB-174	ND	6.68		
PCB-125	-	-	C087	87/117	PCB-175	ND	6.66		
PCB-126	ND	12.0			PCB-176	ND	4.87		
PCB-127	ND	8.71			PCB-177	ND	7.19		
PCB-128	ND	7.39	C	162	PCB-178	ND	6.84		
PCB-129	ND	9.81			PCB-179	ND	4.76		
PCB-130	ND	8.41			PCB-180	ND	6.96		
PCB-131	ND	9.64	C	133	PCB-181	ND	6.67		
PCB-132	ND	7.60	C	161	PCB-182	ND	5.96	C	187
PCB-133	-	-	C131	131	PCB-183	ND	5.95		
PCB-134	ND	9.65	C	143	PCB-184	ND	4.55		
PCB-135	ND	9.06			PCB-185	ND	6.63		
PCB-136	ND	5.16			PCB-186	ND	4.85		
PCB-137	ND	9.39			PCB-187	-	-	C182	182
PCB-138	18.0	-	C,J	163/164	PCB-188	ND	5.81		
PCB-139	18.1	-	C,J	149	PCB-189	ND	4.86		
PCB-140	ND	7.79			PCB-190	ND	5.48		
PCB-141	ND	8.41			PCB-191	ND	5.22		
PCB-142	ND	9.34			PCB-192	ND	5.38		
PCB-143	-	-	C134	134	PCB-193	ND	4.99		
PCB-144	ND	8.39			PCB-194	ND	3.76		
PCB-145	ND	5.15			PCB-195	ND	4.17		
PCB-146	ND	6.99	C	165	PCB-196	ND	7.62	C	203
PCB-147	ND	7.89			PCB-197	ND	5.58		
PCB-148	ND	6.97			PCB-198	ND	9.17		
PCB-149	-	-	C139,J	139	PCB-199	ND	7.53		
PCB-150	ND	4.90			PCB-200	ND	5.81		

EPA Method 1668 PCBs



FAL ID: 14849-001-SA
Client ID: M1001-SW-221122
Matrix: Aqueous
Batch No: X6325

Date Extracted: 01-04-2023
Date Received: 12-28-2022
Amount: 0.979 L

ICal: DAILY209FAL4-1-5-23
GC Column: DB1MS
Units: pg/L

Acquired: 01-05-2023

Page 3 of 3

Compound	Conc	DL	Qual	Coeluters
PCB-201	ND	5.64		
PCB-202	ND	6.29		
PCB-203	-	-	C196	196
PCB-204	ND	5.85		
PCB-205	ND	3.09		
PCB-206	ND	5.37		
PCB-207	ND	3.54		
PCB-208	ND	3.11		
PCB-209	ND	4.53		

Internal Standards	% Rec	QC Limits	Qual
13C-PCB-1	79.5	5.00 - 145	
13C-PCB-3	73.3	5.00 - 145	
13C-PCB-4	87.0	5.00 - 145	
13C-PCB-15	70.3	5.00 - 145	
13C-PCB-19	73.7	5.00 - 145	
13C-PCB-37	82.8	5.00 - 145	
13C-PCB-54	80.2	5.00 - 145	
13C-PCB-77	76.7	10.0 - 145	
13C-PCB-81	76.9	10.0 - 145	
13C-PCB-104	71.0	10.0 - 145	
13C-PCB-105	84.3	10.0 - 145	
13C-PCB-114	83.6	10.0 - 145	
13C-PCB-118	83.8	10.0 - 145	
13C-PCB-123	75.3	10.0 - 145	
13C-PCB-126	84.5	10.0 - 145	
13C-PCB-155	76.8	10.0 - 145	
13C-PCB-156	81.7	10.0 - 145	
13C-PCB-157	84.7	10.0 - 145	
13C-PCB-167	79.9	10.0 - 145	
13C-PCB-169	86.1	10.0 - 145	
13C-PCB-188	74.4	10.0 - 145	
13C-PCB-189	83.6	10.0 - 145	
13C-PCB-202	78.1	10.0 - 145	
13C-PCB-205	75.3	10.0 - 145	
13C-PCB-206	68.9	10.0 - 145	
13C-PCB-208	68.7	10.0 - 145	
13C-PCB-209	68.9	10.0 - 145	

Cleanup Surrogates	% Rec	QC Limits	Qual
13C-PCB-28	85.2	5.00 - 145	
13C-PCB-111	75.5	10.0 - 145	
13C-PCB-178	74.7	10.0 - 145	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Coelution
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- * Result taken from dilution or reinjection

Analyst: 
Date: 1/6/2023

Reviewed By: 
Date: 1/6/2023

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTOR Frontier	
PROJECT NAME/NO. 2 11352	PO # D-85
REMARKS Please Email Results 14849 800	

Page # 1 of 1

TURNAROUND TIME X Standard TAT RUSH _____ Rush charges authorized by: _____
SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions

						ANALYSES REQUESTED										Notes
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins/Furans	EPH	VPH	PCB Congeners	D/F* 1613						
M1001-SW-221122		11/22/12	0840	water	2				X	X						* see attached

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282 Fax (206) 283-5044	SIGNATURE Relinquished by:	PRINT NAME Michael Erdahl	COMPANY Friedman & Bruya	DATE 12/27/12	TIME 1011
	Received by:	Kathy Zep	Frontier	12/28/12	1030
	Relinquished by:				
	Received by:				

Michael Erdahl

From: "Lynn Green" <lynng@evren-nw.com>
Date: Tuesday, December 27, 2022 10:13 AM
To: "Michael Erdahl" <merdahl@friedmanandbruya.com>
Cc: "Tori Bennett" <torib@evren-nw.com>; "Evan Bruggeman" <evanb@evren-nw.com>
Subject: RE: 1355-19001-02

We need the following Dioxins and Furans:

- 2,3,7,8-TCDD/TCDF,
- 1,2,3,7,8-PeCDD/PeCDF,
- 1,2,3,4,7,8-HxCDD/HxCDF,
- 1,2,3,6,7,8-HxCDD/HxCDF,
- 1,2,3,7,8,9-HxCDD/HxCDF,
- 2,3,4,6,7,8-HxCDF,
- 1,2,3,4,6,7,8-HpCDD/HpCDF, and
- 1,2,3,4,7,8,9-HpCDF

You previously reported MRLS between 0.000000304 - 0.000000732 ug/L for these constituents. Which method was that?

Lynn D. Green, Ph. D.
 P.G./R.G./L.G./C.E.G./L.E.G.
 Principal Engineering Geologist / Hydrologist
 EVREN Northwest, Inc
 Environmental and Natural Resource Consulting
 ><))))> ><))))> ><))))> ><))))>

From: Michael Erdahl <merdahl@friedmanandbruya.com>
Sent: Tuesday, December 27, 2022 10:10 AM
To: Lynn Green <lynng@evren-nw.com>
Cc: Tori Bennett <torib@evren-nw.com>; Evan Bruggeman <evanb@evren-nw.com>
Subject: Re: 1355-19001-02

The list was provided with this one.

- 1) Do you only want 2,3,7,8-TCDD eq only for both of these samples?
- 2) Which method--EPA 1613 or 8290?

Michael Erdahl
 Senior Project Manager
 Friedman and Bruya
 (206) 285-8282 x 247
 (206) 446-5926 (cell)

This message is private or privileged. If you are not the person or party for whom this message is intended, we apologize for the mistake and please forward us a note that this message was received in

12/27/2022

Frontier Analytical Laboratory

Sample Login Form

FAL Project ID: **14849**

Client:	Friedman & Bruya, Inc.
Client Project ID:	211352
Date Received:	12/28/2022
Time Received:	10:30 am
Received By:	KZ
Logged In By:	KZ
# of Samples Received:	1
Duplicates:	0
Storage Location:	R-4

Method of Delivery:	Fed-Ex
Tracking Number:	813795597453
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	0
Cooling Method	Blue Ice/Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test aqueous sample for residual Chlorine	Yes
Sodium Thiosulfate Added	No
Adequate Sample Volume	Yes
Appropriate Sample Container	Yes
pH Range of Aqueous Sample	Between 4 and 9
Anomalies or additional comments:	

TRACT SAMPLE CHAIN OF CUSTODY

Send Report To: Michael Erdahl

Company: Friedman and ...

Address: 3012 ...

City, State, ZIP: ...

Phone #: (206) ...

SUBCONTRACTOR: Frontier

PROJECT NAME/NO.: 2 11352

Page # 1 of 1

TURNAROUND TIME

Standard TAT

Authorized by: ...

SAL

Sample ID: M1001-SW-221122

Storage: R-4

Client: ENW 1352-01B

Sample ID: M1001-SW-221122

Date/Time: 11-22-22

Project: 1355-1001-03

Client: ENW 1352-01C

Sample ID: M1001-SW-221122

Date/Time: 11-22-22

Project: 1355-1001-03

Friedman and ...
3012 ...
Seattle
Ph. (206) ...
Fax (206) ...

2023/01/04

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

January 26, 2023

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included is the amended report from the testing of material submitted on November 23, 2022 from the 1355-19001-02, F&BI 211352 project. Per your request, the task number has been changed to -02.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Neil Woller, Paul Trone, Evan Bruggeman
ENW1207R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

December 7, 2022

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the results from the testing of material submitted on November 23, 2022 from the 1355-19001-02, F&BI 211352 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Neil Woller, Paul Trone, Evan Bruggeman
ENW1207R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 23, 2022 by Friedman & Bruya, Inc. from the Evren Northwest 1355-19001-02, F&BI 211352 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

211352 -01

Evren Northwest

M1001-SW-221122

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	M1001-SW-221122	Client:	Evren Northwest
Date Received:	11/23/22	Project:	1355-19001-02, F&BI 211352
Date Extracted:	11/29/22	Lab ID:	211352-01
Date Analyzed:	12/01/22	Data File:	211352-01.294
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	32.0
Cadmium	<0.2
Chromium	<1
Copper	<5
Lead	<0.2
Silver	<0.2
Zinc	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	M1001-SW-221122	Client:	Evren Northwest
Date Received:	11/23/22	Project:	1355-19001-02, F&BI 211352
Date Extracted:	11/29/22	Lab ID:	211352-01 x10
Date Analyzed:	12/01/22	Data File:	211352-01 x10.133
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Manganese	646
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-02, F&BI 211352
Date Extracted:	11/28/22	Lab ID:	I2-843 mb
Date Analyzed:	11/29/22	Data File:	I2-843 mb.117
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<0.2
Cadmium	<0.2
Chromium	<1
Copper	<5
Lead	<0.2
Manganese	<1
Silver	<0.2
Zinc	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID: M1001-SW-221122	Client: Evren Northwest
Date Received: 11/23/22	Project: 1355-19001-02, F&BI 211352
Date Extracted: 11/28/22	Lab ID: 211352-01 1/0.5
Date Analyzed: 11/29/22	Data File: 112913.D
Matrix: Water	Instrument: GCMS9
Units: ug/L (ppb)	Operator: VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	64	15	144
2-Fluorobiphenyl	72	25	128
2,4,6-Tribromophenol	83	10	142
Terphenyl-d14	113	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.1
2-Methylnaphthalene	<0.1
1-Methylnaphthalene	<0.1
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	0.017
Phenanthrene	0.072
Anthracene	<0.01
Fluoranthene	0.033
Pyrene	0.22
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.02
Dibenz(a,h)anthracene	<0.01
Bis(2-ethylhexyl) phthalate	<1.6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-02, F&BI 211352
Date Extracted:	11/28/22	Lab ID:	02-2878 mb 1/0.5
Date Analyzed:	11/29/22	Data File:	112908.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	88	15	144
2-Fluorobiphenyl	85	25	128
2,4,6-Tribromophenol	74	10	142
Terphenyl-d14	115	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.1
2-Methylnaphthalene	<0.1
1-Methylnaphthalene	<0.1
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.02
Dibenz(a,h)anthracene	<0.01
Bis(2-ethylhexyl) phthalate	<1.6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/07/22

Date Received: 11/23/22

Project: 1355-19001-02, F&BI 211352

Date Extracted: 11/23/22

Date Analyzed: 11/29/22

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Results Reported as mg/L (ppm)

<u>Sample ID</u> Laboratory ID	Total Suspended <u>Solids</u>
M1001-SW-221122 211352-01	15
Method Blank 02-2871 mb	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/07/22

Date Received: 11/23/22

Project: 1355-19001-02, F&BI 211352

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 211362-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<1	91	91	70-130	0
Cadmium	ug/L (ppb)	5	<1	100	98	70-130	2
Chromium	ug/L (ppb)	20	<1	95	95	70-130	0
Copper	ug/L (ppb)	20	15.0	95	95	70-130	0
Lead	ug/L (ppb)	10	1.94	94	95	70-130	1
Manganese	ug/L (ppb)	20	6.87	94	94	70-130	0
Silver	ug/L (ppb)	5	<1	94	93	70-130	1
Zinc	ug/L (ppb)	50	109	91	95	70-130	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	93	85-115
Cadmium	ug/L (ppb)	5	98	85-115
Chromium	ug/L (ppb)	20	95	85-115
Copper	ug/L (ppb)	20	100	85-115
Lead	ug/L (ppb)	10	100	85-115
Manganese	ug/L (ppb)	20	94	85-115
Silver	ug/L (ppb)	5	99	85-115
Zinc	ug/L (ppb)	50	97	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/07/22

Date Received: 11/23/22

Project: 1355-19001-02, F&BI 211352

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample 1/0.5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	77	75	50-104	3
2-Methylnaphthalene	ug/L (ppb)	5	77	78	54-109	1
1-Methylnaphthalene	ug/L (ppb)	5	76	77	55-108	1
Acenaphthylene	ug/L (ppb)	5	91	94	60-114	3
Acenaphthene	ug/L (ppb)	5	88	91	57-110	3
Fluorene	ug/L (ppb)	5	92	95	61-115	3
Phenanthrene	ug/L (ppb)	5	92	93	63-113	1
Anthracene	ug/L (ppb)	5	93	95	65-117	2
Fluoranthene	ug/L (ppb)	5	102	102	68-121	0
Pyrene	ug/L (ppb)	5	105	112	66-125	6
Benz(a)anthracene	ug/L (ppb)	5	106	110	70-130	4
Chrysene	ug/L (ppb)	5	101	104	67-119	3
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	5	86	94	57-124	9
Benzo(a)pyrene	ug/L (ppb)	5	101	103	68-126	2
Benzo(b)fluoranthene	ug/L (ppb)	5	110	112	62-130	2
Benzo(k)fluoranthene	ug/L (ppb)	5	104	108	67-125	4
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	92	96	63-131	4
Dibenz(a,h)anthracene	ug/L (ppb)	5	98	99	62-133	1
Benzo(g,h,i)perylene	ug/L (ppb)	5	92	92	57-133	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/07/22

Date Received: 11/23/22

Project: 1355-19001-02, F&BI 211352

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR
TOTAL SUSPENDED SOLIDS BY METHOD 2540D**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	50	80	90	35-146	11

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

March 13, 2023

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the results from the testing of material submitted on January 17, 2023 from the 1355-19001-02, F&BI 301237 project. There are 12 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Neil Woller, Paul Trone, Evan Bruggeman
ENW0313R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 17, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 1355-19001-02, F&BI 301237 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
301237 -01	M1001-SW-230113

The sample was sent to Enthalpy Analytical for dioxin and furan and PCB congener analyses. In addition, the sample was sent to Fremont Analytical for total aluminum analysis. The reports are enclosed.

An 8270E internal standard failed the acceptance criteria for sample M1001-SW-230113. The sample was diluted and reanalyzed with acceptable results. Both data sets were reported.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	M1001-SW-230113	Client:	Evren Northwest
Date Received:	01/17/23	Project:	1355-19001-02, F&BI 301237
Date Extracted:	01/17/23	Lab ID:	301237-01
Date Analyzed:	01/17/23	Data File:	301237-01.135
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Cadmium	<0.2
Chromium	3.42
Copper	14.7
Lead	5.62
Manganese	116
Silver	<0.2
Zinc	90.7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	M1001-SW-230113	Client:	Evren Northwest
Date Received:	01/17/23	Project:	1355-19001-02, F&BI 301237
Date Extracted:	01/17/23	Lab ID:	301237-01
Date Analyzed:	01/18/23	Data File:	301237-01.063
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Arsenic	0.814
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-02, F&BI 301237
Date Extracted:	01/18/23	Lab ID:	I3-33 mb2
Date Analyzed:	01/18/23	Data File:	I3-33 mb2.057
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<0.2
Cadmium	<0.2
Chromium	<1
Copper	<5
Lead	<0.2
Manganese	<1
Silver	<0.2
Zinc	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID: M1001-SW-230113	Client: Evren Northwest
Date Received: 01/17/23	Project: 1355-19001-02, F&BI 301237
Date Extracted: 01/17/23	Lab ID: 301237-01 1/0.5
Date Analyzed: 01/19/23	Data File: 011922.D
Matrix: Water	Instrument: GCMS12
Units: ug/L (ppb)	Operator: VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	50	11	173
2-Fluorobiphenyl	57	44	108
2,4,6-Tribromophenol	74	10	140
Terphenyl-d14	94	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.1
Acenaphthene	<0.01
Fluoranthene	0.076
Pyrene	0.14
Benz(a)anthracene	0.017
Chrysene	0.058
Benzo(a)pyrene	0.040 J
Benzo(b)fluoranthene	0.071 J
Benzo(k)fluoranthene	0.026 J
Indeno(1,2,3-cd)pyrene	0.025 J
Dibenz(a,h)anthracene	<0.01 J
Benzo(g,h,i)perylene	0.038 J
Dibenz(a,h)anthracene	<0.01 J
Bis(2-ethylhexyl) phthalate	<1.6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	M1001-SW-230113	Client:	Evren Northwest
Date Received:	01/17/23	Project:	1355-19001-02, F&BI 301237
Date Extracted:	01/17/23	Lab ID:	301237-01 1/5
Date Analyzed:	01/17/23	Data File:	011722.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	46 d	16	137
2-Fluorobiphenyl	55 d	46	122
2,4,6-Tribromophenol	91 d	17	154
Terphenyl-d14	77 d	31	167

Compounds:	ug/L (ppb)
Fluorene	<0.1
Phenanthrene	<0.1
Anthracene	<0.1
Benzo(a)pyrene	<0.1
Benzo(b)fluoranthene	<0.1
Benzo(k)fluoranthene	<0.1
Indeno(1,2,3-cd)pyrene	<0.1
Dibenz(a,h)anthracene	<0.1
Benzo(g,h,i)perylene	<0.2
Dibenz(a,h)anthracene	<0.1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-02, F&BI 301237
Date Extracted:	01/17/23	Lab ID:	03-161 mb3 1/0.5
Date Analyzed:	01/17/23	Data File:	011714.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	89	11	173
2-Fluorobiphenyl	94	44	108
2,4,6-Tribromophenol	85	10	140
Terphenyl-d14	103	50	150

Compounds:	ug/L (ppb)
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Naphthalene	<0.1
Acenaphthene	<0.01
Fluorene	<0.04
Phenanthrene	<0.04
Anthracene	<0.04
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.02
Dibenz(a,h)anthracene	<0.01
Bis(2-ethylhexyl) phthalate	<1.6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/23

Date Received: 01/17/23

Project: 1355-19001-02, F&BI 301237

Date Extracted: 01/23/23

Date Analyzed: 01/25/23

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Results Reported as mg/L (ppm)

<u>Sample ID</u> Laboratory ID	Total Suspended <u>Solids</u>
M1001-SW-230113 301237-01	93
Method Blank 03-203 mb	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/23

Date Received: 01/17/23

Project: 1355-19001-02, F&BI 301237

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 301203-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	7.31	79	81	70-130	2
Cadmium	ug/L (ppb)	5	<1	98	97	70-130	1
Chromium	ug/L (ppb)	20	<1	87	92	70-130	6
Copper	ug/L (ppb)	20	<5	76	71	70-130	7
Lead	ug/L (ppb)	10	<1	88	87	70-130	1
Manganese	ug/L (ppb)	20	957	64 b	0 b	70-130	200 b
Silver	ug/L (ppb)	5	<1	92	92	70-130	0
Zinc	ug/L (ppb)	50	<5	77	75	70-130	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	94	85-115
Cadmium	ug/L (ppb)	5	103	85-115
Chromium	ug/L (ppb)	20	102	85-115
Copper	ug/L (ppb)	20	106	85-115
Lead	ug/L (ppb)	10	101	85-115
Manganese	ug/L (ppb)	20	97	85-115
Silver	ug/L (ppb)	5	100	85-115
Zinc	ug/L (ppb)	50	104	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/23

Date Received: 01/17/23

Project: 1355-19001-02, F&BI 301237

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	73	76	62-97	4
Acenaphthene	ug/L (ppb)	5	82	83	70-130	1
Fluorene	ug/L (ppb)	5	88	90	70-130	2
Phenanthrene	ug/L (ppb)	5	94	96	70-130	2
Anthracene	ug/L (ppb)	5	93	95	70-130	2
Fluoranthene	ug/L (ppb)	5	99	101	70-130	2
Pyrene	ug/L (ppb)	5	96	95	70-130	1
Benz(a)anthracene	ug/L (ppb)	5	99	97	70-130	2
Chrysene	ug/L (ppb)	5	97	95	70-130	2
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	5	95	98	44-140	3
Benzo(a)pyrene	ug/L (ppb)	5	101	101	70-130	0
Benzo(b)fluoranthene	ug/L (ppb)	5	101	102	70-130	1
Benzo(k)fluoranthene	ug/L (ppb)	5	97	99	70-130	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	114	109	70-130	4
Dibenz(a,h)anthracene	ug/L (ppb)	5	105	104	70-130	1
Benzo(g,h,i)perylene	ug/L (ppb)	5	100	99	70-130	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/23

Date Received: 01/17/23

Project: 1355-19001-02, F&BI 301237

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR
TOTAL SUSPENDED SOLIDS BY METHOD 2540D**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	86	94	35-146	9

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased high; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

01/17/22 C3/J1

Phone 503-452-5561 Email lynn@fusion-wu.com

SAMPLERS (signature) <i>[Signature]</i>		Page # <u>01</u> of <u>01</u>
PROJECT NAME 1355-19001-0802	PO #	TURNOAROUND TIME ☒ Standard turnaround ☐ RUSH Rush charges authorized by: _____
REMARKS <i>See Attached form</i> For Sample details Project specific RLS? - Yes / No	INVOICE TO PUEB 2/17/73 ME	SAMPLE DISPOSAL ☐ Archive samples ☐ Other _____ Default: Dispose after 30 days

[illegible]

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
	Bailey family	ENW	1-13-73	17:00
Received by: 	ANHPHAN	FSB	01/17/23	10:20
Relinquished by:				
Received by:		Samples received at	4 °C	



March 09, 2023

**Enthalpy Analytical - El Dorado Hills
Work Order No. 2301182**

Mr. Michael Erdahl
Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119

Dear Mr. Erdahl,

Enclosed are the results for the sample set received at Enthalpy Analytical - EDH on January 18, 2023 under your Project Name '301237'.

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,

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. 2301182

Case Narrative

Sample Condition on Receipt:

One aqueous 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

This 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 in the Method Blank. The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries outside the acceptance criteria are flagged with an "H" qualifier.

EPA Method 1668C

The sample was extracted and analyzed for 209 PCB congeners by EPA Method 1668C using a ZB-1 GC column.

Holding Times

The method holding time criteria were met for this sample.

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 limit 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
2301182-01	M1001-SW-230113	13-Jan-23 12:15	18-Jan-23 08:47	Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L

ANALYTICAL RESULTS

Sample ID: Method Blank
EPA Method 1613B

Client Data				Laboratory Data			
Name:	Friedman & Bruya, Inc.			Lab Sample:	B23B040-BLK1		
Project:	301237			QC Batch:	B23B040		Date Extracted: 06-Feb-23
Matrix:	Aqueous			Sample Size:	1.00 L		Column: ZB-DIOXIN

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
2,3,7,8-TCDD	ND	1.81	1.78			08-Feb-23 13:02	1
1,2,3,7,8-PeCDD	ND	1.04	5.63			08-Feb-23 13:02	1
1,2,3,4,7,8-HxCDD	ND	1.17	4.18			08-Feb-23 13:02	1
1,2,3,6,7,8-HxCDD	ND	1.28	3.51			08-Feb-23 13:02	1
1,2,3,7,8,9-HxCDD	ND	1.25	4.46			08-Feb-23 13:02	1
1,2,3,4,6,7,8-HpCDD	ND	1.26	4.84			08-Feb-23 13:02	1
OCDD	ND	3.02	16.4			08-Feb-23 13:02	1
2,3,7,8-TCDF	ND	0.233	1.78			08-Feb-23 13:02	1
1,2,3,7,8-PeCDF	ND	0.674	5.01			08-Feb-23 13:02	1
2,3,4,7,8-PeCDF	ND	0.726	4.99			08-Feb-23 13:02	1
1,2,3,4,7,8-HxCDF	ND	0.554	6.87			08-Feb-23 13:02	1
1,2,3,6,7,8-HxCDF	ND	0.572	6.31			08-Feb-23 13:02	1
2,3,4,6,7,8-HxCDF	ND	0.649	5.80			08-Feb-23 13:02	1
1,2,3,7,8,9-HxCDF	ND	0.902	5.33			08-Feb-23 13:02	1
1,2,3,4,6,7,8-HpCDF	ND	0.519	5.96			08-Feb-23 13:02	1
1,2,3,4,7,8,9-HpCDF	ND	0.734	5.34			08-Feb-23 13:02	1
OCDF	ND	1.62	11.3			08-Feb-23 13:02	1

Toxic Equivalent	
TEQMinWHO2005Dioxin	0.00

Totals		
Total TCDD	ND	1.81
Total PeCDD	ND	1.04
Total HxCDD	ND	1.28
Total HpCDD	ND	1.26
Total TCDF	ND	0.233
Total PeCDF	ND	0.726
Total HxCDF	ND	0.902
Total HpCDF	ND	0.734

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-2,3,7,8-TCDD	IS	20.0	25 - 164	H	08-Feb-23 13:02	1
13C-1,2,3,7,8-PeCDD	IS	81.2	25 - 181		08-Feb-23 13:02	1
13C-1,2,3,4,7,8-HxCDD	IS	101	32 - 141		08-Feb-23 13:02	1
13C-1,2,3,6,7,8-HxCDD	IS	96.1	28 - 130		08-Feb-23 13:02	1
13C-1,2,3,7,8,9-HxCDD	IS	97.2	32 - 141		08-Feb-23 13:02	1
13C-1,2,3,4,6,7,8-HpCDD	IS	93.7	23 - 140		08-Feb-23 13:02	1
13C-OCDD	IS	65.2	17 - 157		08-Feb-23 13:02	1
13C-2,3,7,8-TCDF	IS	91.8	24 - 169		08-Feb-23 13:02	1
13C-1,2,3,7,8-PeCDF	IS	92.7	24 - 185		08-Feb-23 13:02	1
13C-2,3,4,7,8-PeCDF	IS	82.3	21 - 178		08-Feb-23 13:02	1
13C-1,2,3,4,7,8-HxCDF	IS	103	26 - 152		08-Feb-23 13:02	1
13C-1,2,3,6,7,8-HxCDF	IS	99.2	26 - 123		08-Feb-23 13:02	1
13C-2,3,4,6,7,8-HxCDF	IS	95.2	28 - 136		08-Feb-23 13:02	1
13C-1,2,3,7,8,9-HxCDF	IS	94.6	29 - 147		08-Feb-23 13:02	1
13C-1,2,3,4,6,7,8-HpCDF	IS	90.5	28 - 143		08-Feb-23 13:02	1
13C-1,2,3,4,7,8,9-HpCDF	IS	81.9	26 - 138		08-Feb-23 13:02	1
13C-OCDF	IS	75.1	17 - 157		08-Feb-23 13:02	1
37Cl-2,3,7,8-TCDD	CRS	15.9	35 - 197	H	08-Feb-23 13:02	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: Friedman & Bruya, Inc. Project: 301237 Matrix: Aqueous			Laboratory Data Lab Sample: B23B040-BS1 QC Batch: B23B040 Date Extracted: 06-Feb-23 08:03 Sample Size: 1.00 L Column: ZB-DIOXIN				
Analyte	Amt Found (pg/L)	Spike Amt	% Recovery	Limits	Qualifiers	Analyzed	Dilution
2,3,7,8-TCDD	175	200	87.5	67-158		08-Feb-23 11:32	1
1,2,3,7,8-PeCDD	982	1000	98.2	70-142		08-Feb-23 11:32	1
1,2,3,4,7,8-HxCDD	903	1000	90.3	70-164		08-Feb-23 11:32	1
1,2,3,6,7,8-HxCDD	990	1000	99.0	76-134		08-Feb-23 11:32	1
1,2,3,7,8,9-HxCDD	994	1000	99.4	64-162		08-Feb-23 11:32	1
1,2,3,4,6,7,8-HpCDD	865	1000	86.5	70-140		08-Feb-23 11:32	1
OCDD	2110	2000	105	78-144		08-Feb-23 11:32	1
2,3,7,8-TCDF	162	200	81.1	75-158		08-Feb-23 11:32	1
1,2,3,7,8-PeCDF	992	1000	99.2	80-134		08-Feb-23 11:32	1
2,3,4,7,8-PeCDF	1040	1000	104	68-160		08-Feb-23 11:32	1
1,2,3,4,7,8-HxCDF	1020	1000	102	72-134		08-Feb-23 11:32	1
1,2,3,6,7,8-HxCDF	1020	1000	102	84-130		08-Feb-23 11:32	1
2,3,4,6,7,8-HxCDF	970	1000	97.0	70-156		08-Feb-23 11:32	1
1,2,3,7,8,9-HxCDF	909	1000	90.9	78-130		08-Feb-23 11:32	1
1,2,3,4,6,7,8-HpCDF	985	1000	98.5	82-122		08-Feb-23 11:32	1
1,2,3,4,7,8,9-HpCDF	1040	1000	104	78-138		08-Feb-23 11:32	1
OCDF	1950	2000	97.4	63-170		08-Feb-23 11:32	1
Labeled Standards	Type		% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-2,3,7,8-TCDD	IS		26.8	20-175		08-Feb-23 11:32	1
13C-1,2,3,7,8-PeCDD	IS		92.5	21-227		08-Feb-23 11:32	1
13C-1,2,3,4,7,8-HxCDD	IS		106	21-193		08-Feb-23 11:32	1
13C-1,2,3,6,7,8-HxCDD	IS		100	25-163		08-Feb-23 11:32	1
13C-1,2,3,7,8,9-HxCDD	IS		104	21-193		08-Feb-23 11:32	1
13C-1,2,3,4,6,7,8-HpCDD	IS		104	26-166		08-Feb-23 11:32	1
13C-OCDD	IS		76.5	13-199		08-Feb-23 11:32	1
13C-2,3,7,8-TCDF	IS		96.8	22-152		08-Feb-23 11:32	1
13C-1,2,3,7,8-PeCDF	IS		96.2	21-192		08-Feb-23 11:32	1
13C-2,3,4,7,8-PeCDF	IS		97.5	13-328		08-Feb-23 11:32	1
13C-1,2,3,4,7,8-HxCDF	IS		98.1	19-202		08-Feb-23 11:32	1
13C-1,2,3,6,7,8-HxCDF	IS		96.7	21-159		08-Feb-23 11:32	1
13C-2,3,4,6,7,8-HxCDF	IS		96.7	22-176		08-Feb-23 11:32	1
13C-1,2,3,7,8,9-HxCDF	IS		99.9	17-205		08-Feb-23 11:32	1
13C-1,2,3,4,6,7,8-HpCDF	IS		98.2	21-158		08-Feb-23 11:32	1
13C-1,2,3,4,7,8,9-HpCDF	IS		87.0	20-186		08-Feb-23 11:32	1
13C-OCDF	IS		87.6	13-199		08-Feb-23 11:32	1
37Cl-2,3,7,8-TCDD	CRS		23.0	31-191	H	08-Feb-23 11:32	1

Sample ID: M1001-SW-230113
EPA Method 1613B

Client Data				Laboratory Data			
Name:	Friedman & Bruya, Inc.			Lab Sample:	2301182-01	Date Received:	18-Jan-23 08:47
Project:	301237			QC Batch:	B23B040	Date Extracted:	06-Feb-23
Matrix:	Aqueous			Sample Size:	0.975 L	Column:	ZB-DIOXIN
Date Collected:	13-Jan-23 12:15						
Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
2,3,7,8-TCDD	ND	1.62	1.83			08-Feb-23 13:47	1
1,2,3,7,8-PeCDD	ND	1.40	5.78			08-Feb-23 13:47	1
1,2,3,4,7,8-HxCDD	ND	1.97	4.29			08-Feb-23 13:47	1
1,2,3,6,7,8-HxCDD	ND	2.23	3.60			08-Feb-23 13:47	1
1,2,3,7,8,9-HxCDD	ND	2.27	4.58			08-Feb-23 13:47	1
1,2,3,4,6,7,8-HpCDD	44.2		4.96			08-Feb-23 13:47	1
OCDD	398		16.8			08-Feb-23 13:47	1
2,3,7,8-TCDF	ND	0.381	1.83			08-Feb-23 13:47	1
1,2,3,7,8-PeCDF	ND	1.08	5.14			08-Feb-23 13:47	1
2,3,4,7,8-PeCDF	ND	1.06	5.12			08-Feb-23 13:47	1
1,2,3,4,7,8-HxCDF	ND	0.978	7.05			08-Feb-23 13:47	1
1,2,3,6,7,8-HxCDF	ND	1.06	6.47			08-Feb-23 13:47	1
2,3,4,6,7,8-HxCDF	ND	1.34	5.95			08-Feb-23 13:47	1
1,2,3,7,8,9-HxCDF	ND	1.58	5.47			08-Feb-23 13:47	1
1,2,3,4,6,7,8-HpCDF	ND		6.11	7.98		08-Feb-23 13:47	1
1,2,3,4,7,8,9-HpCDF	ND	4.12	5.48			08-Feb-23 13:47	1
OCDF	26.5		11.6		J	08-Feb-23 13:47	1
Toxic Equivalent							
TEQMinWHO2005Dioxin	0.569						
Totals							
Total TCDD	ND	1.62					
Total PeCDD	ND	1.40					
Total HxCDD	5.67			11.9	J		
Total HpCDD	116						
Total TCDF	ND	0.381					
Total PeCDF	1.04					J	
Total HxCDF	4.84			9.19	J		
Total HpCDF	14.9			22.8	J		
Labeled Standards	Type	% Recovery		Limits	Qualifiers	Analyzed	Dilution
13C-2,3,7,8-TCDD	IS	39.6		25 - 164		08-Feb-23 13:47	1
13C-1,2,3,7,8-PeCDD	IS	87.1		25 - 181		08-Feb-23 13:47	1
13C-1,2,3,4,7,8-HxCDD	IS	103		32 - 141		08-Feb-23 13:47	1
13C-1,2,3,6,7,8-HxCDD	IS	96.6		28 - 130		08-Feb-23 13:47	1
13C-1,2,3,7,8,9-HxCDD	IS	97.8		32 - 141		08-Feb-23 13:47	1
13C-1,2,3,4,6,7,8-HpCDD	IS	96.7		23 - 140		08-Feb-23 13:47	1
13C-OCDD	IS	67.1		17 - 157		08-Feb-23 13:47	1
13C-2,3,7,8-TCDF	IS	92.0		24 - 169		08-Feb-23 13:47	1
13C-1,2,3,7,8-PeCDF	IS	89.8		24 - 185		08-Feb-23 13:47	1
13C-2,3,4,7,8-PeCDF	IS	85.5		21 - 178		08-Feb-23 13:47	1
13C-1,2,3,4,7,8-HxCDF	IS	99.1		26 - 152		08-Feb-23 13:47	1
13C-1,2,3,6,7,8-HxCDF	IS	97.5		26 - 123		08-Feb-23 13:47	1
13C-2,3,4,6,7,8-HxCDF	IS	93.0		28 - 136		08-Feb-23 13:47	1
13C-1,2,3,7,8,9-HxCDF	IS	92.6		29 - 147		08-Feb-23 13:47	1
13C-1,2,3,4,6,7,8-HpCDF	IS	89.5		28 - 143		08-Feb-23 13:47	1
13C-1,2,3,4,7,8,9-HpCDF	IS	79.0		26 - 138		08-Feb-23 13:47	1
13C-OCDF	IS	76.0		17 - 157		08-Feb-23 13:47	1
37Cl-2,3,7,8-TCDD	CRS	38.2		35 - 197		08-Feb-23 13:47	1

EDL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

MDL - Method Detection Limit

Sample ID: Method Blank
EPA Method 1668C
Client Data

Name: Friedman & Bruya, Inc.
Project: 301237
Matrix: Aqueous

Laboratory Data

Lab Sample: B23B082-BLK1
QC Batch: B23B082
Sample Size: 1.00 L
Date Extracted: 08-Feb-23
Column: ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-1	ND	1.42	5.60			11-Feb-23 15:36	1
PCB-2	ND	1.76	3.08			11-Feb-23 15:36	1
PCB-3	ND	1.79	7.64			11-Feb-23 15:36	1
PCB-4/10	ND	14.3	3.15			11-Feb-23 15:36	1
PCB-5/8	ND	11.4	2.61			11-Feb-23 15:36	1
PCB-6	ND	11.2	3.48			11-Feb-23 15:36	1
PCB-7/9	ND	11.9	7.27			11-Feb-23 15:36	1
PCB-11	ND	10.3	19.5			11-Feb-23 15:36	1
PCB-12/13	ND	11.3	1.73			11-Feb-23 15:36	1
PCB-14	ND	11.2	1.88			11-Feb-23 15:36	1
PCB-15	ND	11.3	1.73			11-Feb-23 15:36	1
PCB-16/32	ND	1.16	3.70			11-Feb-23 15:36	1
PCB-17	ND	1.42	2.60			11-Feb-23 15:36	1
PCB-18	ND	1.33	5.95			11-Feb-23 15:36	1
PCB-19	ND	1.48	2.27			11-Feb-23 15:36	1
PCB-20/21/33	ND	1.79	3.75			11-Feb-23 15:36	1
PCB-22	ND	1.73	1.80			11-Feb-23 15:36	1
PCB-23	ND	1.83	2.04			11-Feb-23 15:36	1
PCB-24/27	ND	1.02	4.01			11-Feb-23 15:36	1
PCB-25	ND	1.79	1.87			11-Feb-23 15:36	1
PCB-26	ND	1.79	1.09			11-Feb-23 15:36	1
PCB-28	ND	1.61	4.17			11-Feb-23 15:36	1
PCB-29	ND	1.90	1.85			11-Feb-23 15:36	1
PCB-30	ND	0.934	2.16			11-Feb-23 15:36	1
PCB-31	ND	1.59	3.12			11-Feb-23 15:36	1
PCB-34	ND	1.86	1.41			11-Feb-23 15:36	1
PCB-35	ND	2.67	1.57			11-Feb-23 15:36	1
PCB-36	ND	2.62	1.49			11-Feb-23 15:36	1
PCB-37	ND	2.72	1.04			11-Feb-23 15:36	1
PCB-38	ND	2.66	0.696			11-Feb-23 15:36	1
PCB-39	ND	2.79	0.789			11-Feb-23 15:36	1
PCB-40	ND	2.09	2.95			11-Feb-23 15:36	1
PCB-41/64/71/72	ND	1.07	3.44			11-Feb-23 15:36	1
PCB-42/59	ND	1.23	1.78			11-Feb-23 15:36	1
PCB-43/49	ND	1.25	3.38			11-Feb-23 15:36	1
PCB-44	ND	1.58	8.62			11-Feb-23 15:36	1
PCB-45	ND	1.44	0.638			11-Feb-23 15:36	1
PCB-46	ND	1.50	2.42			11-Feb-23 15:36	1
PCB-47	ND	1.39	13.4			11-Feb-23 15:36	1
PCB-48/75	ND	1.15	2.38			11-Feb-23 15:36	1
PCB-50	ND	1.20	1.97			11-Feb-23 15:36	1
PCB-51	ND	1.16	2.62			11-Feb-23 15:36	1
PCB-52/69	ND	1.07	3.68			11-Feb-23 15:36	1
PCB-53	ND	1.23	2.02			11-Feb-23 15:36	1
PCB-54	ND	0.989	1.34			11-Feb-23 15:36	1
PCB-55	ND	0.903	0.789			11-Feb-23 15:36	1
PCB-56/60	ND	1.02	2.63			11-Feb-23 15:36	1
PCB-57	ND	0.816	1.71			11-Feb-23 15:36	1
PCB-58	ND	0.812	1.97			11-Feb-23 15:36	1
PCB-61/70	ND	0.898	2.45			11-Feb-23 15:36	1
PCB-62	ND	1.15	2.28			11-Feb-23 15:36	1
PCB-63	ND	0.905	1.23			11-Feb-23 15:36	1

Sample ID: Method Blank
EPA Method 1668C
Client Data

Name: Friedman & Bruya, Inc.
Project: 301237
Matrix: Aqueous

Laboratory Data

Lab Sample: B23B082-BLK1
QC Batch: B23B082
Sample Size: 1.00 L
Date Extracted: 08-Feb-23
Column: ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-65	ND	1.03	1.53			11-Feb-23 15:36	1
PCB-66/76	ND	0.820	2.66			11-Feb-23 15:36	1
PCB-67	ND	0.865	1.19			11-Feb-23 15:36	1
PCB-68	ND	1.01	3.06			11-Feb-23 15:36	1
PCB-73	ND	0.885	1.55			11-Feb-23 15:36	1
PCB-74	ND	0.808	1.22			11-Feb-23 15:36	1
PCB-77	ND	1.11	1.40			11-Feb-23 15:36	1
PCB-78	ND	1.08	1.35			11-Feb-23 15:36	1
PCB-79	ND	0.908	1.45			11-Feb-23 15:36	1
PCB-80	ND	0.892	2.16			11-Feb-23 15:36	1
PCB-81	ND	1.16	1.47			11-Feb-23 15:36	1
PCB-82	ND	1.33	2.66			11-Feb-23 15:36	1
PCB-83	ND	0.869	1.90			11-Feb-23 15:36	1
PCB-84/92	ND	1.49	3.46			11-Feb-23 15:36	1
PCB-85/116	ND	1.10	2.24			11-Feb-23 15:36	1
PCB-86	ND	1.28	2.63			11-Feb-23 15:36	1
PCB-87/117/125	ND	1.01	4.60			11-Feb-23 15:36	1
PCB-88/91	ND	1.55	2.85			11-Feb-23 15:36	1
PCB-89	ND	1.39	2.20			11-Feb-23 15:36	1
PCB-90/101	ND	1.36	4.36			11-Feb-23 15:36	1
PCB-93	ND	1.85	3.77			11-Feb-23 15:36	1
PCB-94	ND	1.70	2.55			11-Feb-23 15:36	1
PCB-95/98/102	ND	1.32	7.56			11-Feb-23 15:36	1
PCB-96	ND	1.15	2.24			11-Feb-23 15:36	1
PCB-97	ND	1.20	1.92			11-Feb-23 15:36	1
PCB-99	ND	1.24	1.95			11-Feb-23 15:36	1
PCB-100	ND	1.40	2.79			11-Feb-23 15:36	1
PCB-103	ND	1.46	2.47			11-Feb-23 15:36	1
PCB-104	ND	1.15	1.17			11-Feb-23 15:36	1
PCB-105	ND	1.19	1.61			11-Feb-23 15:36	1
PCB-106/118	ND	0.899	2.45			11-Feb-23 15:36	1
PCB-107/109	ND	0.768	3.15			11-Feb-23 15:36	1
PCB-108/112	ND	1.09	2.81			11-Feb-23 15:36	1
PCB-110	ND	0.903	2.50			11-Feb-23 15:36	1
PCB-111/115	ND	0.838	3.44			11-Feb-23 15:36	1
PCB-113	ND	0.978	2.68			11-Feb-23 15:36	1
PCB-114	ND	1.09	1.16			11-Feb-23 15:36	1
PCB-119	ND	0.885	2.02			11-Feb-23 15:36	1
PCB-120	ND	0.755	1.85			11-Feb-23 15:36	1
PCB-121	ND	0.963	2.16			11-Feb-23 15:36	1
PCB-122	ND	1.27	0.995			11-Feb-23 15:36	1
PCB-123	ND	0.850	2.85			11-Feb-23 15:36	1
PCB-124	ND	0.789	1.88			11-Feb-23 15:36	1
PCB-126	ND	1.35	1.19			11-Feb-23 15:36	1
PCB-127	ND	1.23	1.07			11-Feb-23 15:36	1
PCB-128/162	ND	0.694	1.38			11-Feb-23 15:36	1
PCB-129	ND	0.935	2.03			11-Feb-23 15:36	1
PCB-130	ND	0.989	1.98			11-Feb-23 15:36	1
PCB-131/133	ND	0.804	1.45			11-Feb-23 15:36	1
PCB-132/161	ND	0.644	2.82			11-Feb-23 15:36	1
PCB-134/143	ND	0.859	2.72			11-Feb-23 15:36	1
PCB-135	ND	0.810	3.63			11-Feb-23 15:36	1

Sample ID: Method Blank
EPA Method 1668C
Client Data

Name: Friedman & Bruya, Inc.
Project: 301237
Matrix: Aqueous

Laboratory Data

Lab Sample: B23B082-BLK1
QC Batch: B23B082
Sample Size: 1.00 L
Date Extracted: 08-Feb-23
Column: ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-136	ND	0.664	2.51			11-Feb-23 15:36	1
PCB-137	ND	0.838	1.40			11-Feb-23 15:36	1
PCB-138/163/164	ND	0.654	3.10			11-Feb-23 15:36	1
PCB-139/149	ND	0.757	5.79			11-Feb-23 15:36	1
PCB-140	ND	0.897	3.49			11-Feb-23 15:36	1
PCB-141	ND	0.852	0.680			11-Feb-23 15:36	1
PCB-142	ND	0.898	2.07			11-Feb-23 15:36	1
PCB-144	ND	0.847	1.58			11-Feb-23 15:36	1
PCB-145	ND	0.596	2.03			11-Feb-23 15:36	1
PCB-146/165	ND	0.654	3.47			11-Feb-23 15:36	1
PCB-147	ND	0.821	3.19			11-Feb-23 15:36	1
PCB-148	ND	0.879	3.37			11-Feb-23 15:36	1
PCB-150	ND	0.627	1.95			11-Feb-23 15:36	1
PCB-151	ND	0.868	2.75			11-Feb-23 15:36	1
PCB-152	ND	0.575	1.37			11-Feb-23 15:36	1
PCB-153	ND	0.623	1.25			11-Feb-23 15:36	1
PCB-154	ND	0.812	3.39			11-Feb-23 15:36	1
PCB-155	ND	0.687	1.54			11-Feb-23 15:36	1
PCB-156	ND	0.579	1.31			11-Feb-23 15:36	1
PCB-157	ND	0.622	1.44			11-Feb-23 15:36	1
PCB-158/160	ND	0.663	2.59			11-Feb-23 15:36	1
PCB-159	ND	0.529	1.02			11-Feb-23 15:36	1
PCB-166	ND	0.563	0.988			11-Feb-23 15:36	1
PCB-167	ND	0.648	1.56			11-Feb-23 15:36	1
PCB-168	ND	0.596	2.33			11-Feb-23 15:36	1
PCB-169	ND	0.791	1.27			11-Feb-23 15:36	1
PCB-170	ND	0.852	1.85			11-Feb-23 15:36	1
PCB-171	ND	0.814	1.73			11-Feb-23 15:36	1
PCB-172	ND	0.789	1.45			11-Feb-23 15:36	1
PCB-173	ND	0.929	2.14			11-Feb-23 15:36	1
PCB-174	ND	0.828	1.79			11-Feb-23 15:36	1
PCB-175	ND	0.795	1.75			11-Feb-23 15:36	1
PCB-176	ND	0.609	0.624			11-Feb-23 15:36	1
PCB-177	ND	0.869	1.43			11-Feb-23 15:36	1
PCB-178	ND	0.817	3.61			11-Feb-23 15:36	1
PCB-179	ND	0.631	2.56			11-Feb-23 15:36	1
PCB-180	ND	0.762	2.46			11-Feb-23 15:36	1
PCB-181	ND	0.746	1.39			11-Feb-23 15:36	1
PCB-182/187	ND	0.720	2.62			11-Feb-23 15:36	1
PCB-183	ND	0.745	1.12			11-Feb-23 15:36	1
PCB-184	ND	0.595	1.54			11-Feb-23 15:36	1
PCB-185	ND	0.801	0.887			11-Feb-23 15:36	1
PCB-186	ND	0.551	1.98			11-Feb-23 15:36	1
PCB-188	ND	0.590	1.77			11-Feb-23 15:36	1
PCB-189	ND	0.543	1.09			11-Feb-23 15:36	1
PCB-190	ND	0.652	1.78			11-Feb-23 15:36	1
PCB-191	ND	0.659	1.26			11-Feb-23 15:36	1
PCB-192	ND	0.614	1.69			11-Feb-23 15:36	1
PCB-193	ND	0.674	1.43			11-Feb-23 15:36	1
PCB-194	ND	0.382	1.30			11-Feb-23 15:36	1
PCB-195	ND	0.423	1.99			11-Feb-23 15:36	1
PCB-196/203	ND	0.375	3.66			11-Feb-23 15:36	1

Sample ID: Method Blank				EPA Method 1668C			
Client Data			Laboratory Data				
Name:	Friedman & Bruya, Inc.		Lab Sample:	B23B082-BLK1		Date Extracted:	08-Feb-23
Project:	301237		QC Batch:	B23B082		Column:	ZB-1
Matrix:	Aqueous		Sample Size:	1.00 L			
Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-197	ND	0.294	2.02			11-Feb-23 15:36	1
PCB-198	ND	0.407	2.25			11-Feb-23 15:36	1
PCB-199	ND	0.401	4.08			11-Feb-23 15:36	1
PCB-200	ND	0.311	1.58			11-Feb-23 15:36	1
PCB-201	ND	0.313	1.67			11-Feb-23 15:36	1
PCB-202	ND	0.285	2.49			11-Feb-23 15:36	1
PCB-204	ND	0.296	2.04			11-Feb-23 15:36	1
PCB-205	ND	0.319	1.21			11-Feb-23 15:36	1
PCB-206	ND	0.0702	1.93			11-Feb-23 15:36	1
PCB-207	ND	0.0566	1.50			11-Feb-23 15:36	1
PCB-208	ND	0.0559	1.89			11-Feb-23 15:36	1
PCB-209	ND	0.0295	0.754			11-Feb-23 15:36	1
Totals							
Total monoCB	ND	1.79					
Total diCB	ND	14.3					
Total triCB	ND	2.79					
Total tetraCB	ND	2.09					
Total pentaCB	ND	1.85					
Total hexaCB	ND	0.989					
Total heptaCB	ND	0.929					
Total octaCB	ND	0.423					
Total nonaCB	ND	0.0702					
DecaCB	ND	0.0295					
Total PCB	ND						
Labeled Standards	Type	% Recovery		Limits	Qualifiers	Analyzed	Dilution
13C-PCB-1	IS	46.1		5 - 145		11-Feb-23 15:36	1
13C-PCB-3	IS	36.4		5 - 145		11-Feb-23 15:36	1
13C-PCB-4	IS	50.7		5 - 145		11-Feb-23 15:36	1
13C-PCB-11	IS	54.5		5 - 145		11-Feb-23 15:36	1
13C-PCB-9	IS	52.9		5 - 145		11-Feb-23 15:36	1
13C-PCB-19	IS	57.3		5 - 145		11-Feb-23 15:36	1
13C-PCB-28	IS	76.7		5 - 145		11-Feb-23 15:36	1
13C-PCB-32	IS	67.2		5 - 145		11-Feb-23 15:36	1
13C-PCB-37	IS	63.5		5 - 145		11-Feb-23 15:36	1
13C-PCB-47	IS	52.6		5 - 145		11-Feb-23 15:36	1
13C-PCB-52	IS	57.6		5 - 145		11-Feb-23 15:36	1
13C-PCB-54	IS	51.9		5 - 145		11-Feb-23 15:36	1
13C-PCB-70	IS	63.4		5 - 145		11-Feb-23 15:36	1
13C-PCB-77	IS	62.0		10 - 145		11-Feb-23 15:36	1
13C-PCB-80	IS	57.5		10 - 145		11-Feb-23 15:36	1
13C-PCB-81	IS	62.2		10 - 145		11-Feb-23 15:36	1
13C-PCB-95	IS	54.8		10 - 145		11-Feb-23 15:36	1
13C-PCB-97	IS	64.4		10 - 145		11-Feb-23 15:36	1
13C-PCB-101	IS	57.6		10 - 145		11-Feb-23 15:36	1
13C-PCB-104	IS	50.1		10 - 145		11-Feb-23 15:36	1
13C-PCB-105	IS	74.1		10 - 145		11-Feb-23 15:36	1
13C-PCB-114	IS	68.4		10 - 145		11-Feb-23 15:36	1
13C-PCB-118	IS	70.2		10 - 145		11-Feb-23 15:36	1
13C-PCB-123	IS	67.8		10 - 145		11-Feb-23 15:36	1
13C-PCB-126	IS	65.1		10 - 145		11-Feb-23 15:36	1
13C-PCB-127	IS	71.9		10 - 145		11-Feb-23 15:36	1

Sample ID: Method Blank
EPA Method 1668C

Client Data			Laboratory Data			
Name:	Friedman & Bruya, Inc.		Lab Sample:	B23B082-BLK1		
Project:	301237		QC Batch:	B23B082	Date Extracted:	08-Feb-23
Matrix:	Aqueous		Sample Size:	1.00 L	Column:	ZB-1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-PCB-138	IS	67.4	10 - 145		11-Feb-23 15:36	1
13C-PCB-141	IS	66.6	10 - 145		11-Feb-23 15:36	1
13C-PCB-153	IS	67.9	10 - 145		11-Feb-23 15:36	1
13C-PCB-155	IS	46.9	10 - 145		11-Feb-23 15:36	1
13C-PCB-156	IS	74.1	10 - 145		11-Feb-23 15:36	1
13C-PCB-157	IS	77.9	10 - 145		11-Feb-23 15:36	1
13C-PCB-159	IS	74.6	10 - 145		11-Feb-23 15:36	1
13C-PCB-167	IS	72.5	10 - 145		11-Feb-23 15:36	1
13C-PCB-169	IS	69.4	10 - 145		11-Feb-23 15:36	1
13C-PCB-170	IS	75.4	10 - 145		11-Feb-23 15:36	1
13C-PCB-180	IS	70.8	10 - 145		11-Feb-23 15:36	1
13C-PCB-188	IS	60.6	10 - 145		11-Feb-23 15:36	1
13C-PCB-189	IS	79.5	10 - 145		11-Feb-23 15:36	1
13C-PCB-194	IS	67.2	10 - 145		11-Feb-23 15:36	1
13C-PCB-202	IS	73.8	10 - 145		11-Feb-23 15:36	1
13C-PCB-206	IS	67.6	10 - 145		11-Feb-23 15:36	1
13C-PCB-208	IS	68.1	10 - 145		11-Feb-23 15:36	1
13C-PCB-209	IS	82.7	10 - 145		11-Feb-23 15:36	1
13C-PCB-79	CRS	82.6	10 - 145		11-Feb-23 15:36	1
13C-PCB-178	CRS	100	10 - 145		11-Feb-23 15:36	1

EDL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

MDL - Method Detection Limit

Sample ID: OPR
EPA Method 1668C

Client Data			Laboratory Data			
Name:	Friedman & Bruya, Inc.		Lab Sample:	B23B082-BS1		
Project:	301237		QC Batch:	B23B082	Date Extracted:	08-Feb-23 13:25
Matrix:	Aqueous		Sample Size:	1.00 L	Column:	ZB-1

Analyte	Amt Found (pg/L)	Spike Amt	% Recovery	Limits	Qualifiers	Analyzed	Dilution
PCB-1	1040	1000	104	60-135		11-Feb-23 11:31	1
PCB-3	1180	1000	118	60-135		11-Feb-23 11:31	1
PCB-4/10	2250	2000	112	60-135		11-Feb-23 11:31	1
PCB-15	980	1000	98.0	60-135		11-Feb-23 11:31	1
PCB-19	816	1000	81.6	60-135		11-Feb-23 11:31	1
PCB-37	1150	1000	115	60-135		11-Feb-23 11:31	1
PCB-54	950	1000	95.0	60-135		11-Feb-23 11:31	1
PCB-77	927	1000	92.7	60-135		11-Feb-23 11:31	1
PCB-81	891	1000	89.1	60-135		11-Feb-23 11:31	1
PCB-104	906	1000	90.6	60-135		11-Feb-23 11:31	1
PCB-105	1030	1000	103	60-135		11-Feb-23 11:31	1
PCB-106/118	1790	2000	89.4	60-135		11-Feb-23 11:31	1
PCB-114	980	1000	98.0	60-135		11-Feb-23 11:31	1
PCB-123	1060	1000	106	60-135		11-Feb-23 11:31	1
PCB-126	1000	1000	100	60-135		11-Feb-23 11:31	1
PCB-155	966	1000	96.6	60-135		11-Feb-23 11:31	1
PCB-156	945	1000	94.5	60-135		11-Feb-23 11:31	1
PCB-157	1010	1000	101	60-135		11-Feb-23 11:31	1
PCB-167	957	1000	95.7	60-135		11-Feb-23 11:31	1
PCB-169	962	1000	96.2	60-135		11-Feb-23 11:31	1
PCB-188	921	1000	92.1	60-135		11-Feb-23 11:31	1
PCB-189	954	1000	95.4	60-135		11-Feb-23 11:31	1
PCB-202	952	1000	95.2	60-135		11-Feb-23 11:31	1
PCB-205	1240	1000	124	60-135		11-Feb-23 11:31	1
PCB-206	960	1000	96.0	60-135		11-Feb-23 11:31	1
PCB-208	990	1000	99.0	60-135		11-Feb-23 11:31	1
PCB-209	865	1000	86.5	60-135		11-Feb-23 11:31	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-PCB-1	IS	54.0	15-145		11-Feb-23 11:31	1
13C-PCB-3	IS	47.6	15-145		11-Feb-23 11:31	1
13C-PCB-4	IS	61.9	15-145		11-Feb-23 11:31	1
13C-PCB-11	IS	65.2	15-145		11-Feb-23 11:31	1
13C-PCB-9	IS	61.5	15-145		11-Feb-23 11:31	1
13C-PCB-19	IS	72.0	15-145		11-Feb-23 11:31	1
13C-PCB-28	IS	73.2	15-145		11-Feb-23 11:31	1
13C-PCB-32	IS	71.6	15-145		11-Feb-23 11:31	1
13C-PCB-37	IS	62.3	15-145		11-Feb-23 11:31	1
13C-PCB-47	IS	58.9	15-145		11-Feb-23 11:31	1
13C-PCB-52	IS	63.6	15-145		11-Feb-23 11:31	1
13C-PCB-54	IS	60.6	15-145		11-Feb-23 11:31	1
13C-PCB-70	IS	67.5	15-145		11-Feb-23 11:31	1
13C-PCB-77	IS	70.0	40-145		11-Feb-23 11:31	1
13C-PCB-80	IS	65.8	40-145		11-Feb-23 11:31	1
13C-PCB-81	IS	71.8	40-145		11-Feb-23 11:31	1

Sample ID: OPR
EPA Method 1668C

Client Data		Laboratory Data				
Name:	Friedman & Bruya, Inc.	Lab Sample:	B23B082-BS1	Date Extracted:	08-Feb-23 13:25	
Project:	301237	QC Batch:	B23B082	Column:	ZB-1	
Matrix:	Aqueous	Sample Size:	1.00 L			
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-PCB-95	IS	63.3	40-145		11-Feb-23 11:31	1
13C-PCB-97	IS	69.1	40-145		11-Feb-23 11:31	1
13C-PCB-101	IS	64.3	40-145		11-Feb-23 11:31	1
13C-PCB-104	IS	54.8	40-145		11-Feb-23 11:31	1
13C-PCB-105	IS	79.4	40-145		11-Feb-23 11:31	1
13C-PCB-114	IS	75.4	40-145		11-Feb-23 11:31	1
13C-PCB-118	IS	77.0	40-145		11-Feb-23 11:31	1
13C-PCB-123	IS	67.8	40-145		11-Feb-23 11:31	1
13C-PCB-126	IS	69.3	40-145		11-Feb-23 11:31	1
13C-PCB-127	IS	76.4	40-145		11-Feb-23 11:31	1
13C-PCB-138	IS	77.3	40-145		11-Feb-23 11:31	1
13C-PCB-141	IS	73.4	40-145		11-Feb-23 11:31	1
13C-PCB-153	IS	73.0	40-145		11-Feb-23 11:31	1
13C-PCB-155	IS	53.3	40-145		11-Feb-23 11:31	1
13C-PCB-156	IS	77.5	40-145		11-Feb-23 11:31	1
13C-PCB-157	IS	80.6	40-145		11-Feb-23 11:31	1
13C-PCB-159	IS	79.5	40-145		11-Feb-23 11:31	1
13C-PCB-167	IS	77.3	40-145		11-Feb-23 11:31	1
13C-PCB-169	IS	72.3	40-145		11-Feb-23 11:31	1
13C-PCB-170	IS	82.5	40-145		11-Feb-23 11:31	1
13C-PCB-180	IS	80.0	40-145		11-Feb-23 11:31	1
13C-PCB-188	IS	70.1	40-145		11-Feb-23 11:31	1
13C-PCB-189	IS	78.0	40-145		11-Feb-23 11:31	1
13C-PCB-194	IS	69.1	40-145		11-Feb-23 11:31	1
13C-PCB-202	IS	81.0	40-145		11-Feb-23 11:31	1
13C-PCB-206	IS	73.9	40-145		11-Feb-23 11:31	1
13C-PCB-208	IS	73.3	40-145		11-Feb-23 11:31	1
13C-PCB-209	IS	95.8	40-145		11-Feb-23 11:31	1
13C-PCB-79	CRS	85.2	40-145		11-Feb-23 11:31	1
13C-PCB-178	CRS	97.0	40-145		11-Feb-23 11:31	1

Sample ID: M1001-SW-230113
EPA Method 1668C
Client Data

Name: Friedman & Bruya, Inc.
Project: 301237
Matrix: Aqueous
Date Collected: 13-Jan-23 12:15

Laboratory Data

Lab Sample: 2301182-01
QC Batch: B23B082
Sample Size: 0.963 L
Date Received: 18-Jan-23 08:47
Date Extracted: 08-Feb-23
Column: ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-1	6.52		5.82			13-Feb-23 19:05	1
PCB-2	ND	0.735	3.20			13-Feb-23 19:05	1
PCB-3	4.68		7.94		J	13-Feb-23 19:05	1
PCB-4/10	59.9		3.27			13-Feb-23 19:05	1
PCB-5/8	169		2.71			13-Feb-23 19:05	1
PCB-6	ND	5.94	3.61			13-Feb-23 19:05	1
PCB-7/9	ND	6.30	7.55			13-Feb-23 19:05	1
PCB-11	136		20.3			13-Feb-23 19:05	1
PCB-12/13	ND	5.81	1.80			13-Feb-23 19:05	1
PCB-14	ND	5.78	1.95			13-Feb-23 19:05	1
PCB-15	84.6		1.80			13-Feb-23 19:05	1
PCB-16/32	137		3.84			13-Feb-23 19:05	1
PCB-17	85.2		2.70			13-Feb-23 19:05	1
PCB-18	187		6.18			13-Feb-23 19:05	1
PCB-19	19.5		2.36			13-Feb-23 19:05	1
PCB-20/21/33	223		3.89			13-Feb-23 19:05	1
PCB-22	126		1.87			13-Feb-23 19:05	1
PCB-23	ND	1.11	2.12			13-Feb-23 19:05	1
PCB-24/27	18.4		4.16			13-Feb-23 19:05	1
PCB-25	27.4		1.94			13-Feb-23 19:05	1
PCB-26	45.9		1.13			13-Feb-23 19:05	1
PCB-28	303		4.33			13-Feb-23 19:05	1
PCB-29	ND		1.92	2.13		13-Feb-23 19:05	1
PCB-30	ND	0.605	2.24			13-Feb-23 19:05	1
PCB-31	220		3.24			13-Feb-23 19:05	1
PCB-34	ND	1.13	1.46			13-Feb-23 19:05	1
PCB-35	10.6		1.63			13-Feb-23 19:05	1
PCB-36	ND	1.19	1.55			13-Feb-23 19:05	1
PCB-37	138		1.08			13-Feb-23 19:05	1
PCB-38	ND	1.21	0.723			13-Feb-23 19:05	1
PCB-39	ND	1.27	0.819			13-Feb-23 19:05	1
PCB-40	62.1		3.06			13-Feb-23 19:05	1
PCB-41/64/71/72	241		3.57			13-Feb-23 19:05	1
PCB-42/59	93.3		1.85			13-Feb-23 19:05	1
PCB-43/49	159		3.51			13-Feb-23 19:05	1
PCB-44	238		8.95			13-Feb-23 19:05	1
PCB-45	42.9		0.663			13-Feb-23 19:05	1
PCB-46	19.3		2.51			13-Feb-23 19:05	1
PCB-47	58.7		13.9			13-Feb-23 19:05	1
PCB-48/75	56.9		2.47			13-Feb-23 19:05	1
PCB-50	ND	1.50	2.05			13-Feb-23 19:05	1
PCB-51	9.75		2.72			13-Feb-23 19:05	1
PCB-52/69	238		3.82			13-Feb-23 19:05	1
PCB-53	31.4		2.10			13-Feb-23 19:05	1
PCB-54	ND	1.23	1.39			13-Feb-23 19:05	1
PCB-55	ND	1.26	0.819			13-Feb-23 19:05	1
PCB-56/60	137		2.73			13-Feb-23 19:05	1
PCB-57	ND	1.14	1.78			13-Feb-23 19:05	1
PCB-58	ND	1.14	2.05			13-Feb-23 19:05	1
PCB-61/70	235		2.54			13-Feb-23 19:05	1
PCB-62	ND	1.33	2.37			13-Feb-23 19:05	1
PCB-63	7.44		1.28			13-Feb-23 19:05	1

Sample ID: M1001-SW-230113
EPA Method 1668C
Client Data

Name: Friedman & Bruya, Inc.
Project: 301237
Matrix: Aqueous
Date Collected: 13-Jan-23 12:15

Laboratory Data

Lab Sample: 2301182-01
QC Batch: B23B082
Sample Size: 0.963 L
Date Received: 18-Jan-23 08:47
Date Extracted: 08-Feb-23
Column: ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-65	ND	1.19	1.59			13-Feb-23 19:05	1
PCB-66/76	164		2.76			13-Feb-23 19:05	1
PCB-67	7.84		1.24			13-Feb-23 19:05	1
PCB-68	ND	1.16	3.18			13-Feb-23 19:05	1
PCB-73	2.10		1.61		J	13-Feb-23 19:05	1
PCB-74	82.5		1.27			13-Feb-23 19:05	1
PCB-77	19.6		1.45			13-Feb-23 19:05	1
PCB-78	ND	1.69	1.40			13-Feb-23 19:05	1
PCB-79	4.13		1.51		J	13-Feb-23 19:05	1
PCB-80	ND	1.25	2.24			13-Feb-23 19:05	1
PCB-81	4.80		1.53		J	13-Feb-23 19:05	1
PCB-82	55.4		2.76			13-Feb-23 19:05	1
PCB-83	ND	1.14	1.97			13-Feb-23 19:05	1
PCB-84/92	159		3.59			13-Feb-23 19:05	1
PCB-85/116	60.9		2.33			13-Feb-23 19:05	1
PCB-86	ND	1.67	2.73			13-Feb-23 19:05	1
PCB-87/117/125	153		4.78			13-Feb-23 19:05	1
PCB-88/91	53.0		2.96			13-Feb-23 19:05	1
PCB-89	ND		2.29	4.66		13-Feb-23 19:05	1
PCB-90/101	363		4.53			13-Feb-23 19:05	1
PCB-93	ND	1.90	3.92			13-Feb-23 19:05	1
PCB-94	ND	1.75	2.65			13-Feb-23 19:05	1
PCB-95/98/102	275		7.85			13-Feb-23 19:05	1
PCB-96	ND		2.33	2.94		13-Feb-23 19:05	1
PCB-97	114		1.99			13-Feb-23 19:05	1
PCB-99	131		2.03			13-Feb-23 19:05	1
PCB-100	ND	1.28	2.90			13-Feb-23 19:05	1
PCB-103	ND		2.57	1.72		13-Feb-23 19:05	1
PCB-104	ND	1.05	1.22			13-Feb-23 19:05	1
PCB-105	193		1.67			13-Feb-23 19:05	1
PCB-106/118	357		2.54			13-Feb-23 19:05	1
PCB-107/109	ND		3.27	19.6		13-Feb-23 19:05	1
PCB-108/112	ND		2.92	15.9		13-Feb-23 19:05	1
PCB-110	497		2.60			13-Feb-23 19:05	1
PCB-111/115	10.8		3.57			13-Feb-23 19:05	1
PCB-113	ND		2.78	1.57		13-Feb-23 19:05	1
PCB-114	10.1		1.20			13-Feb-23 19:05	1
PCB-119	ND	1.16	2.10			13-Feb-23 19:05	1
PCB-120	ND	0.989	1.92			13-Feb-23 19:05	1
PCB-121	ND	0.990	2.24			13-Feb-23 19:05	1
PCB-122	ND	2.13	1.03			13-Feb-23 19:05	1
PCB-123	ND		2.96	6.42		13-Feb-23 19:05	1
PCB-124	17.6		1.95			13-Feb-23 19:05	1
PCB-126	ND		1.24	5.57		13-Feb-23 19:05	1
PCB-127	ND	1.78	1.11			13-Feb-23 19:05	1
PCB-128/162	96.3		1.43			13-Feb-23 19:05	1
PCB-129	30.1		2.11			13-Feb-23 19:05	1
PCB-130	35.1		2.06			13-Feb-23 19:05	1
PCB-131/133	11.0		1.51			13-Feb-23 19:05	1
PCB-132/161	142		2.93			13-Feb-23 19:05	1
PCB-134/143	23.2		2.83			13-Feb-23 19:05	1
PCB-135	43.8		3.77			13-Feb-23 19:05	1

Sample ID: M1001-SW-230113
EPA Method 1668C
Client Data

Name: Friedman & Bruya, Inc.
Project: 301237
Matrix: Aqueous
Date Collected: 13-Jan-23 12:15

Laboratory Data

Lab Sample: 2301182-01
QC Batch: B23B082
Sample Size: 0.963 L
Date Received: 18-Jan-23 08:47
Date Extracted: 08-Feb-23
Column: ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-136	47.2		2.61			13-Feb-23 19:05	1
PCB-137	24.4		1.45			13-Feb-23 19:05	1
PCB-138/163/164	511		3.22			13-Feb-23 19:05	1
PCB-139/149	305		6.01			13-Feb-23 19:05	1
PCB-140	ND	0.648	3.62			13-Feb-23 19:05	1
PCB-141	89.7		0.706			13-Feb-23 19:05	1
PCB-142	ND	3.07	2.15			13-Feb-23 19:05	1
PCB-144	16.9		1.64			13-Feb-23 19:05	1
PCB-145	ND	0.430	2.11			13-Feb-23 19:05	1
PCB-146/165	50.5		3.60			13-Feb-23 19:05	1
PCB-147	7.08		3.31			13-Feb-23 19:05	1
PCB-148	ND	0.635	3.50			13-Feb-23 19:05	1
PCB-150	ND	0.453	2.03			13-Feb-23 19:05	1
PCB-151	76.8		2.86			13-Feb-23 19:05	1
PCB-152	ND	0.415	1.42			13-Feb-23 19:05	1
PCB-153	351		1.30			13-Feb-23 19:05	1
PCB-154	ND		3.52	2.22		13-Feb-23 19:05	1
PCB-155	ND	0.496	1.60			13-Feb-23 19:05	1
PCB-156	55.1		1.36			13-Feb-23 19:05	1
PCB-157	ND		1.50	8.37		13-Feb-23 19:05	1
PCB-158/160	69.1		2.69			13-Feb-23 19:05	1
PCB-159	ND	2.08	1.06			13-Feb-23 19:05	1
PCB-166	ND	2.21	1.03			13-Feb-23 19:05	1
PCB-167	23.5		1.62			13-Feb-23 19:05	1
PCB-168	ND	2.04	2.42			13-Feb-23 19:05	1
PCB-169	ND	3.05	1.32			13-Feb-23 19:05	1
PCB-170	124		1.92			13-Feb-23 19:05	1
PCB-171	ND		1.80	28.3		13-Feb-23 19:05	1
PCB-172	21.4		1.51			13-Feb-23 19:05	1
PCB-173	ND	1.95	2.22			13-Feb-23 19:05	1
PCB-174	126		1.86			13-Feb-23 19:05	1
PCB-175	ND		1.82	3.77		13-Feb-23 19:05	1
PCB-176	ND		0.648	11.0		13-Feb-23 19:05	1
PCB-177	ND		1.49	64.0		13-Feb-23 19:05	1
PCB-178	20.3		3.75			13-Feb-23 19:05	1
PCB-179	42.5		2.66			13-Feb-23 19:05	1
PCB-180	283		2.56			13-Feb-23 19:05	1
PCB-181	ND	1.57	1.44			13-Feb-23 19:05	1
PCB-182/187	127		2.72			13-Feb-23 19:05	1
PCB-183	62.8		1.16			13-Feb-23 19:05	1
PCB-184	ND	1.02	1.60			13-Feb-23 19:05	1
PCB-185	ND		0.921	12.2		13-Feb-23 19:05	1
PCB-186	ND	0.943	2.06			13-Feb-23 19:05	1
PCB-188	ND	1.01	1.84			13-Feb-23 19:05	1
PCB-189	4.62		1.13		J	13-Feb-23 19:05	1
PCB-190	25.0		1.85			13-Feb-23 19:05	1
PCB-191	ND		1.31	5.81		13-Feb-23 19:05	1
PCB-192	ND	1.29	1.76			13-Feb-23 19:05	1
PCB-193	14.2		1.49			13-Feb-23 19:05	1
PCB-194	80.4		1.35			13-Feb-23 19:05	1
PCB-195	28.0		2.07			13-Feb-23 19:05	1
PCB-196/203	78.0		3.80			13-Feb-23 19:05	1

Sample ID: M1001-SW-230113
EPA Method 1668C
Client Data

Name: Friedman & Bruya, Inc.
Project: 301237
Matrix: Aqueous
Date Collected: 13-Jan-23 12:15

Laboratory Data

Lab Sample: 2301182-01
QC Batch: B23B082
Sample Size: 0.963 L
Date Received: 18-Jan-23 08:47
Date Extracted: 08-Feb-23
Column: ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-197	ND		2.10	3.64		13-Feb-23 19:05	1
PCB-198	ND		2.34	2.71		13-Feb-23 19:05	1
PCB-199	79.9		4.24			13-Feb-23 19:05	1
PCB-200	10.4		1.64			13-Feb-23 19:05	1
PCB-201	9.79		1.73			13-Feb-23 19:05	1
PCB-202	15.4		2.59			13-Feb-23 19:05	1
PCB-204	ND	0.441	2.12			13-Feb-23 19:05	1
PCB-205	4.42		1.26		J	13-Feb-23 19:05	1
PCB-206	52.2		2.00			13-Feb-23 19:05	1
PCB-207	6.59		1.56			13-Feb-23 19:05	1
PCB-208	14.4		1.96			13-Feb-23 19:05	1
PCB-209	12.7		0.783			13-Feb-23 19:05	1

Totals

Total monoCB	11.2			
Total diCB	450			
Total triCB	1540		1540	
Total tetraCB	1910			
Total pentaCB	2450		2510	
Total hexaCB	2010		2020	
Total heptaCB	851		976	
Total octaCB	306		313	
Total nonaCB	73.2			
DecaCB	12.7			
Total PCB	9620			

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-PCB-1	IS	74.5	5 - 145		13-Feb-23 19:05	1
13C-PCB-3	IS	64.8	5 - 145		13-Feb-23 19:05	1
13C-PCB-4	IS	69.1	5 - 145		13-Feb-23 19:05	1
13C-PCB-11	IS	74.2	5 - 145		13-Feb-23 19:05	1
13C-PCB-9	IS	72.0	5 - 145		13-Feb-23 19:05	1
13C-PCB-19	IS	95.3	5 - 145		13-Feb-23 19:05	1
13C-PCB-28	IS	92.7	5 - 145		13-Feb-23 19:05	1
13C-PCB-32	IS	98.5	5 - 145		13-Feb-23 19:05	1
13C-PCB-37	IS	78.9	5 - 145		13-Feb-23 19:05	1
13C-PCB-47	IS	81.0	5 - 145		13-Feb-23 19:05	1
13C-PCB-52	IS	81.0	5 - 145		13-Feb-23 19:05	1
13C-PCB-54	IS	78.1	5 - 145		13-Feb-23 19:05	1
13C-PCB-70	IS	79.1	5 - 145		13-Feb-23 19:05	1
13C-PCB-77	IS	67.5	10 - 145		13-Feb-23 19:05	1
13C-PCB-80	IS	76.0	10 - 145		13-Feb-23 19:05	1
13C-PCB-81	IS	68.9	10 - 145		13-Feb-23 19:05	1
13C-PCB-95	IS	74.9	10 - 145		13-Feb-23 19:05	1
13C-PCB-97	IS	73.9	10 - 145		13-Feb-23 19:05	1
13C-PCB-101	IS	74.5	10 - 145		13-Feb-23 19:05	1
13C-PCB-104	IS	82.6	10 - 145		13-Feb-23 19:05	1
13C-PCB-105	IS	69.6	10 - 145		13-Feb-23 19:05	1
13C-PCB-114	IS	67.5	10 - 145		13-Feb-23 19:05	1
13C-PCB-118	IS	71.0	10 - 145		13-Feb-23 19:05	1
13C-PCB-123	IS	70.5	10 - 145		13-Feb-23 19:05	1
13C-PCB-126	IS	55.3	10 - 145		13-Feb-23 19:05	1
13C-PCB-127	IS	69.7	10 - 145		13-Feb-23 19:05	1

Sample ID: M1001-SW-230113
EPA Method 1668C

Client Data			Laboratory Data			
Name:	Friedman & Bruya, Inc.		Lab Sample:	2301182-01	Date Received:	18-Jan-23 08:47
Project:	301237		QC Batch:	B23B082	Date Extracted:	08-Feb-23
Matrix:	Aqueous		Sample Size:	0.963 L	Column:	ZB-1
Date Collected:	13-Jan-23 12:15					
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-PCB-138	IS	76.1	10 - 145		13-Feb-23 19:05	1
13C-PCB-141	IS	76.8	10 - 145		13-Feb-23 19:05	1
13C-PCB-153	IS	80.3	10 - 145		13-Feb-23 19:05	1
13C-PCB-155	IS	90.1	10 - 145		13-Feb-23 19:05	1
13C-PCB-156	IS	70.4	10 - 145		13-Feb-23 19:05	1
13C-PCB-157	IS	75.2	10 - 145		13-Feb-23 19:05	1
13C-PCB-159	IS	77.1	10 - 145		13-Feb-23 19:05	1
13C-PCB-167	IS	74.2	10 - 145		13-Feb-23 19:05	1
13C-PCB-169	IS	63.9	10 - 145		13-Feb-23 19:05	1
13C-PCB-170	IS	73.4	10 - 145		13-Feb-23 19:05	1
13C-PCB-180	IS	71.6	10 - 145		13-Feb-23 19:05	1
13C-PCB-188	IS	76.2	10 - 145		13-Feb-23 19:05	1
13C-PCB-189	IS	64.4	10 - 145		13-Feb-23 19:05	1
13C-PCB-194	IS	70.8	10 - 145		13-Feb-23 19:05	1
13C-PCB-202	IS	94.1	10 - 145		13-Feb-23 19:05	1
13C-PCB-206	IS	76.5	10 - 145		13-Feb-23 19:05	1
13C-PCB-208	IS	84.0	10 - 145		13-Feb-23 19:05	1
13C-PCB-209	IS	98.9	10 - 145		13-Feb-23 19:05	1
13C-PCB-79	CRS	87.5	10 - 145		13-Feb-23 19:05	1
13C-PCB-178	CRS	116	10 - 145		13-Feb-23 19:05	1

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

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection Limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
MDL	Method Detection Limit
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
RL	For 537.1, the reported RLs are the MRLs.
TEQ	Toxic Equivalency, sum of the toxic equivalency factors (TEF) multiplied by the sample concentrations.
TEQMax	TEQ calculation that uses the detection limit as the concentration for non-detects
TEQMin	TEQ calculation that uses zero as the concentration for non-detects
TEQRisk	TEQ calculation that uses ½ 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 Laboratory 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
Massachusetts Department of Environmental Protection	M-CA413
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	2211390
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 are located in the Quality Assurance office and are available upon request.

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2301182 25°C

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER

Enthalpy/Vista

PROJECT NAME/NO.

301237

PO #

D-122

REMARKS

Please Email Results

Page # _____ of _____

TURNAROUND TIME

☒ Standard TAT
☐ RUSH

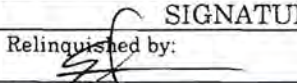
Rush charges authorized by: _____

SAMPLE DISPOSAL

☒ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED										Notes
						Dioxins/Furans	EPH	VPH	PCB Congeners	D/F						
<u>M1001-SW-230113</u>		<u>1/13/23</u>	<u>12:15</u>	<u>2</u>	<u>3</u>				<u>✓</u>	<u>✓</u>						<u>✓ see attached RLs 8/1/17</u>

Friedman & Bruya, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282
 Fax (206) 283-5044

SIGNATURE		PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	<u>1/17</u>	<u>12:00</u>
Received by:	<u>Kelia Wadsworth</u>	<u>Kelia Wadsworth</u>	<u>Enthalpy</u>	<u>01/19/23</u>	<u>0847</u>
Relinquished by:					
Received by:					

2301182

Table 1. Joint Source Control Screening Level Values

Analyte	Laboratory Method Detection Limits (µg/L)	Screening Levels	
		EPA Portland Harbor ROD Cleanup Levels (µg/L)	JSCS SLV (µg/L)
Total Metals			
Aluminum	50	NE	87
Arsenic	0.2	0.018	0.014
Cadmium	0.2	NE	0.094
Chromium	1	100	100
Copper	5	2.74	2.7
Lead	0.2	NE	0.54
Manganese	1	NE	10
Silver	0.2	NE	0.12
Zinc	5	36.5	33
Semi-Volatile Organic Constituents			
Total PCB (as congeners)	0.00000121 - 0.00000497	0.0000064	0.0000064
2,3,7,8-TCDD eq	0.000000304 - 0.000000732	0.0000000005	0.0000000005
Phthalates			
Bis(2-ethylhexyl)phthalate	0.5	NE	0.22
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.0037	NE	0.2
Anthracene	0.0023	NE	0.2
Fluorene	0.0044	NE	0.2
Naphthalene	0.005	NE	0.2
Phenanthrene	0.0062	NE	0.2
Benz(a)anthracene	0.007	0.0012	0.018
Benzo(a)pyrene	0.0028	0.00012	0.018
Benzo(b)fluoranthene	0.0021	0.0012	0.018
Benzo(k)fluoranthene	0.0035	0.0013	0.018
Benzo(g,h,i)perylene	0.0057	NE	0.2
Chrysene	0.0024	0.0013	0.018
Dibenz(a,h)anthracene	0.0051	0.00012	0.018
Fluoranthene	0.0029	NE	0.2
Indeno(1,2,3-cd)pyrene	0.0049	0.0012	0.018
Pyrene	0.0054	NE	0.2
Total Suspended Solids			
TSS	5000	NE	NE

Sample Log-In Checklist



Page # 1 of 1

Work Order #: 2301182

TAT Std

Samples Arrival:	Date/Time <u>01/19/23 0947</u>	Initials: <u>KW</u>	Location: <u>WR-2</u> Shelf/Rack: <u>NA</u>
Delivered By:	☒ FedEx ☐ UPS ☐ On Trac ☐ GLS ☐ DHL ☐ Hand Delivered ☐ Other		
Preservation:	☒ Ice ☐ Blue Ice ☐ Techni Ice ☐ Dry Ice ☐ None		
Temp °C: <u>2.6</u> (uncorrected)	Probe used: Y / ☒ N		Thermometer ID: <u>IR-3</u>
Temp °C: <u>2.5</u> (corrected)			

	YES	NO	NA
Shipping Container(s) Intact?	☒	☐	☐
Shipping Custody Seals Intact?	☐	☒	☒
Airbill <u> </u> Trk # <u>9175 1926 0700</u>	☒	☐	☐
Shipping Documentation Present?	☒	☐	☐
Shipping Container	Enthalpy	☒ Client ☐ Retain ☐ Return ☐ Dispose	
Chain of Custody / Sample Documentation Present?	☒	☐	☐
Chain of Custody / Sample Documentation Complete?	☒	☐	☐
Holding Time Acceptable?	☒	☐	☐
Logged In:	Date/Time <u>01/19/23 1147</u>	Initials: <u>KW</u>	Location: <u>WR-2</u> <u>Kw 01/19/23</u> Shelf/Rack: <u>D-3 B-2/C-6</u>
COC Anomaly/Sample Acceptance Form completed?			☒ ☒

Comments:

CoC/Label Reconciliation Report WO# 2301182

LabNumber	CoC Sample ID	SampleAlias	Sample Date/Time	Container	BaseMatrix	Sample Comments
2301182-01	A M1001-SW-230113	☒	13-Jan-23 12:15	☒	Amber Glass NM Bottle, 1L	Aqueous
2301182-01	B M1001-SW-230113	☒	13-Jan-23 12:15	☒	Amber Glass NM Bottle, 1L	Aqueous
2301182-01	C M1001-SW-230113	☒	13-Jan-23 12:15	☒	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.

	Yes	No	NA	Comments:
Sample Container Intact?	☒	☐	☐	
Sample Custody Seals Intact?	☐	☒	☒	
Adequate Sample Volume?	☒	☐	☐	
Container Type Appropriate for Analysis(es)	☒	☐	☐	

Preservation Documented: Na2S2O3 Trizma NH4CH3CO2

None
All

Other

Verified by/Date: KN 01/19/23

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

June 6, 2023

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the results from the testing of material submitted on March 24, 2023 from the 1355-19001-03, F&BI 303396 project. There are 10 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Neil Woller, Paul Trone, Evan Bruggeman
ENW0606R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 24, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 1355-19001-03, F&BI 303396 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

303396 -01

Evren Northwest

ML001-SW-230323

The samples were sent to Enthalpy for dioxin and furan and PCB congener analyses. In addition, the sample was sent to Fremont for total aluminum analysis. The reports are enclosed.

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	ML001-SW-230323	Client:	Evren Northwest
Date Received:	03/24/23	Project:	1355-19001-03, F&BI 303396
Date Extracted:	03/24/23	Lab ID:	303396-01
Date Analyzed:	03/24/23	Data File:	303396-01.152
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	14.0
Cadmium	<0.2
Chromium	<1
Copper	2.28
Lead	<0.2
Manganese	535
Silver	<0.2
Zinc	3.37

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-03, F&BI 303396
Date Extracted:	03/24/23	Lab ID:	I3-228 mb
Date Analyzed:	03/24/23	Data File:	I3-228 mb.128
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<0.2
Cadmium	<0.2
Chromium	<1
Copper	<0.5
Lead	<0.2
Manganese	<0.24
Silver	<0.2
Zinc	<0.68

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	ML001-SW-230323	Client:	Evren Northwest
Date Received:	03/24/23	Project:	1355-19001-03, F&BI 303396
Date Extracted:	03/27/23	Lab ID:	303396-01 1/0.5
Date Analyzed:	03/27/23	Data File:	032709.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	66	11	173
2-Fluorobiphenyl	71	44	108
2,4,6-Tribromophenol	98	10	140
Terphenyl-d14	95	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.1
2-Methylnaphthalene	<0.1
1-Methylnaphthalene	<0.1
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	0.015
Phenanthrene	0.057
Anthracene	<0.01
Fluoranthene	0.029
Pyrene	0.21
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.02
Dibenz(a,h)anthracene	<0.01
Bis(2-ethylhexyl) phthalate	<1.6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-03, F&BI 303396
Date Extracted:	03/27/23	Lab ID:	03-800 mb 1/0.5
Date Analyzed:	03/27/23	Data File:	032706.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	79	11	173
2-Fluorobiphenyl	77	44	108
2,4,6-Tribromophenol	81	10	140
Terphenyl-d14	91	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.1
2-Methylnaphthalene	<0.1
1-Methylnaphthalene	<0.1
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.02
Bis(2-ethylhexyl) phthalate	<1.6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/06/23

Date Received: 03/24/23

Project: 1355-19001-03, F&BI 303396

Date Extracted: 03/28/23

Date Analyzed: 03/30/23

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Results Reported as mg/L (ppm)

<u>Sample ID</u> Laboratory ID	Total Suspended <u>Solids</u>
ML001-SW-230323 303396-01	7.6
Method Blank 03-417 MB	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/06/23

Date Received: 03/24/23

Project: 1355-19001-03, F&BI 303396

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 303398-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	3.54	95 b	94 b	70-130	1 b
Cadmium	ug/L (ppb)	5	<1	98	98	70-130	0
Chromium	ug/L (ppb)	20	<1	98	98	70-130	0
Copper	ug/L (ppb)	20	8.60	98 b	96 b	70-130	2 b
Lead	ug/L (ppb)	10	<1	95	95	70-130	0
Manganese	ug/L (ppb)	20	7.17	97 b	95 b	70-130	2 b
Silver	ug/L (ppb)	5	<1	90	90	70-130	0
Zinc	ug/L (ppb)	50	390	102 b	93 b	70-130	9 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	96	85-115
Cadmium	ug/L (ppb)	5	100	85-115
Chromium	ug/L (ppb)	20	97	85-115
Copper	ug/L (ppb)	20	100	85-115
Lead	ug/L (ppb)	10	102	85-115
Manganese	ug/L (ppb)	20	97	85-115
Silver	ug/L (ppb)	5	96	85-115
Zinc	ug/L (ppb)	50	100	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/06/23

Date Received: 03/24/23

Project: 1355-19001-03, F&BI 303396

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	77	76	62-97	1
2-Methylnaphthalene	ug/L (ppb)	5	79	78	64-101	1
1-Methylnaphthalene	ug/L (ppb)	5	79	77	64-93	3
Acenaphthylene	ug/L (ppb)	5	93	90	70-130	3
Acenaphthene	ug/L (ppb)	5	90	88	70-130	2
Fluorene	ug/L (ppb)	5	96	93	70-130	3
Phenanthrene	ug/L (ppb)	5	93	96	70-130	3
Anthracene	ug/L (ppb)	5	97	97	70-130	0
Fluoranthene	ug/L (ppb)	5	100	105	70-130	5
Pyrene	ug/L (ppb)	5	108	101	70-130	7
Benz(a)anthracene	ug/L (ppb)	5	102	104	70-130	2
Chrysene	ug/L (ppb)	5	102	101	70-130	1
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	5	99	105	44-140	6
Benzo(a)pyrene	ug/L (ppb)	5	100	100	70-130	0
Benzo(b)fluoranthene	ug/L (ppb)	5	99	98	70-130	1
Benzo(k)fluoranthene	ug/L (ppb)	5	100	97	70-130	3
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	106	104	70-130	2
Dibenz(a,h)anthracene	ug/L (ppb)	5	107	103	70-130	4
Benzo(g,h,i)perylene	ug/L (ppb)	5	105	100	70-130	5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/06/23

Date Received: 03/24/23

Project: 1355-19001-03, F&BI 303396

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR
TOTAL SUSPENDED SOLIDS BY METHOD 2540D**

Laboratory Code: 303417-10 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
TSS	mg/L (ppm)	5.2	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L (ppm)	20	96	35-146

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased high; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

L3/I4

Page # 1 of 1
TURNAROUND TIME
Standard turnaround
JSH
charges authorized by _____
SAMPLE DISPOSAL

SAMPLE DISPOSAL
☒ Archive samples
☐ Other _____
 Default: Dispose after 30 days

ANALYSES REQUESTED

[illegible]

TIME

10:30

Received by:



May 31, 2023

**Enthalpy Analytical - El Dorado Hills
Work Order No. 2303225**

Mr. Michael Erdahl
Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119

Dear Mr. Erdahl,

Enclosed are the results for the sample set received at Enthalpy Analytical - EDH on March 28, 2023 under your Project Name '303396'.

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,

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. 2303225

Case Narrative

Sample Condition on Receipt:

One water 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. An additional bottle was received on May 11, 2023 in good condition.

Analytical Notes:

EPA Method 8290A

The sample was extracted and analyzed for tetra-through-octa chlorinated dioxins and furans by EPA Method 8290A using a ZB-DIOXIN GC column.

Holding Times

The method holding time criteria was met for this sample.

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 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.

EPA Method 1668A

The sample was extracted and analyzed for 209 PCB congeners by EPA Method 1668A using a ZB-1 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.

The labeled standard recoveries outside the acceptance criteria are flagged with an "H" qualifier.

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Sample Inventory Report

Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2303225-01	ML001-SW-230323	23-Mar-23 11:10	28-Mar-23 09:19	Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L

ANALYTICAL RESULTS

Sample ID: Method Blank
EPA Method 8290A

Client Data				Laboratory Data			
Name:	Friedman & Bruya, Inc.			Lab Sample:	B23D041-BLK1		
Project:	303396			QC Batch:	B23D041		Date Extracted: 04-Apr-23
Matrix:	Aqueous			Sample Size:	1.00 L		Column: ZB-DIOXIN

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
2,3,7,8-TCDD	ND		1.78	0.553		21-Apr-23 18:40	1
1,2,3,7,8-PeCDD	ND	0.918	5.63			21-Apr-23 18:40	1
1,2,3,4,7,8-HxCDD	ND	0.937	4.18			21-Apr-23 18:40	1
1,2,3,6,7,8-HxCDD	ND	1.11	3.51			21-Apr-23 18:40	1
1,2,3,7,8,9-HxCDD	ND	1.14	4.46			21-Apr-23 18:40	1
1,2,3,4,6,7,8-HpCDD	ND	0.856	4.84			21-Apr-23 18:40	1
OCDD	ND	4.62	16.4			21-Apr-23 18:40	1
2,3,7,8-TCDF	ND	0.230	1.78			21-Apr-23 18:40	1
1,2,3,7,8-PeCDF	ND	0.383	5.01			21-Apr-23 18:40	1
2,3,4,7,8-PeCDF	ND	0.432	4.99			21-Apr-23 18:40	1
1,2,3,4,7,8-HxCDF	ND	0.531	6.87			21-Apr-23 18:40	1
1,2,3,6,7,8-HxCDF	ND	0.519	6.31			21-Apr-23 18:40	1
2,3,4,6,7,8-HxCDF	ND	0.563	5.80			21-Apr-23 18:40	1
1,2,3,7,8,9-HxCDF	ND	0.736	5.33			21-Apr-23 18:40	1
1,2,3,4,6,7,8-HpCDF	ND	0.366	5.96			21-Apr-23 18:40	1
1,2,3,4,7,8,9-HpCDF	ND	0.550	5.34			21-Apr-23 18:40	1
OCDF	ND	1.48	11.3			21-Apr-23 18:40	1

Toxic Equivalent							
TEQMinWHO2005Dioxin	0.00						

Totals							
Total TCDD	ND			0.553			
Total PeCDD	ND	0.918					
Total HxCDD	ND	1.14					
Total HpCDD	ND	0.856					
Total TCDF	ND	0.230					
Total PeCDF	ND	0.432					
Total HxCDF	0.479						
Total HpCDF	ND	0.550					

Labeled Standards	Type	% Recovery		Limits	Qualifiers	Analyzed	Dilution
13C-2,3,7,8-TCDD	IS	70.4		40 - 135		21-Apr-23 18:40	1
13C-1,2,3,7,8-PeCDD	IS	88.1		40 - 135		21-Apr-23 18:40	1
13C-1,2,3,4,7,8-HxCDD	IS	93.4		40 - 135		21-Apr-23 18:40	1
13C-1,2,3,6,7,8-HxCDD	IS	83.9		40 - 135		21-Apr-23 18:40	1
13C-1,2,3,7,8,9-HxCDD	IS	82.1		40 - 135		21-Apr-23 18:40	1
13C-1,2,3,4,6,7,8-HpCDD	IS	76.8		40 - 135		21-Apr-23 18:40	1
13C-OCDD	IS	40.6		40 - 135		21-Apr-23 18:40	1
13C-2,3,7,8-TCDF	IS	88.1		40 - 135		21-Apr-23 18:40	1
13C-1,2,3,7,8-PeCDF	IS	96.7		40 - 135		21-Apr-23 18:40	1
13C-2,3,4,7,8-PeCDF	IS	92.8		40 - 135		21-Apr-23 18:40	1
13C-1,2,3,4,7,8-HxCDF	IS	87.1		40 - 135		21-Apr-23 18:40	1
13C-1,2,3,6,7,8-HxCDF	IS	85.0		40 - 135		21-Apr-23 18:40	1
13C-2,3,4,6,7,8-HxCDF	IS	89.5		40 - 135		21-Apr-23 18:40	1
13C-1,2,3,7,8,9-HxCDF	IS	84.7		40 - 135		21-Apr-23 18:40	1
13C-1,2,3,4,6,7,8-HpCDF	IS	80.9		40 - 135		21-Apr-23 18:40	1
13C-1,2,3,4,7,8,9-HpCDF	IS	88.8		40 - 135		21-Apr-23 18:40	1
13C-OCDF	IS	58.9		40 - 135		21-Apr-23 18:40	1
37Cl-2,3,7,8-TCDD	CRS	69.0		40 - 135		21-Apr-23 18:40	1

EDL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

MDL - Method Detection Limit

Sample ID: OPR
EPA Method 8290A

Client Data				Laboratory Data			
Name:	Friedman & Bruya, Inc.			Lab Sample:	B23D041-BS1		
Project:	303396			QC Batch:	B23D041		Date Extracted: 04-Apr-23 15:34
Matrix:	Aqueous			Sample Size:	1.00 L		Column: ZB-DIOXIN

Analyte	Amt Found (pg/L)	Spike Amt	% Recovery	Limits	Qualifiers	Analyzed	Dilution
2,3,7,8-TCDD	251	200	125	70-130		24-Apr-23 15:57	1
1,2,3,7,8-PeCDD	1210	1000	121	70-130		24-Apr-23 15:57	1
1,2,3,4,7,8-HxCDD	1080	1000	108	70-130		24-Apr-23 15:57	1
1,2,3,6,7,8-HxCDD	1190	1000	119	70-130		24-Apr-23 15:57	1
1,2,3,7,8,9-HxCDD	1230	1000	123	70-130		24-Apr-23 15:57	1
1,2,3,4,6,7,8-HpCDD	1100	1000	110	70-130		24-Apr-23 15:57	1
OCDD	2530	2000	126	70-130		24-Apr-23 15:57	1
2,3,7,8-TCDF	222	200	111	70-130		24-Apr-23 15:57	1
1,2,3,7,8-PeCDF	1050	1000	105	70-130		24-Apr-23 15:57	1
2,3,4,7,8-PeCDF	1090	1000	109	70-130		24-Apr-23 15:57	1
1,2,3,4,7,8-HxCDF	1170	1000	117	70-130		24-Apr-23 15:57	1
1,2,3,6,7,8-HxCDF	1160	1000	116	70-130		24-Apr-23 15:57	1
2,3,4,6,7,8-HxCDF	1160	1000	116	70-130		24-Apr-23 15:57	1
1,2,3,7,8,9-HxCDF	1160	1000	116	70-130		24-Apr-23 15:57	1
1,2,3,4,6,7,8-HpCDF	1050	1000	105	70-130		24-Apr-23 15:57	1
1,2,3,4,7,8,9-HpCDF	1150	1000	115	70-130		24-Apr-23 15:57	1
OCDF	2410	2000	121	70-130		24-Apr-23 15:57	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-2,3,7,8-TCDD	IS	74.0	40-135		24-Apr-23 15:57	1
13C-1,2,3,7,8-PeCDD	IS	112	40-135		24-Apr-23 15:57	1
13C-1,2,3,4,7,8-HxCDD	IS	102	40-135		24-Apr-23 15:57	1
13C-1,2,3,6,7,8-HxCDD	IS	93.5	40-135		24-Apr-23 15:57	1
13C-1,2,3,7,8,9-HxCDD	IS	89.1	40-135		24-Apr-23 15:57	1
13C-1,2,3,4,6,7,8-HpCDD	IS	89.2	40-135		24-Apr-23 15:57	1
13C-OCDD	IS	60.5	40-135		24-Apr-23 15:57	1
13C-2,3,7,8-TCDF	IS	83.6	40-135		24-Apr-23 15:57	1
13C-1,2,3,7,8-PeCDF	IS	92.1	40-135		24-Apr-23 15:57	1
13C-2,3,4,7,8-PeCDF	IS	95.4	40-135		24-Apr-23 15:57	1
13C-1,2,3,4,7,8-HxCDF	IS	91.6	40-135		24-Apr-23 15:57	1
13C-1,2,3,6,7,8-HxCDF	IS	93.1	40-135		24-Apr-23 15:57	1
13C-2,3,4,6,7,8-HxCDF	IS	94.0	40-135		24-Apr-23 15:57	1
13C-1,2,3,7,8,9-HxCDF	IS	87.7	40-135		24-Apr-23 15:57	1
13C-1,2,3,4,6,7,8-HpCDF	IS	84.3	40-135		24-Apr-23 15:57	1
13C-1,2,3,4,7,8,9-HpCDF	IS	82.3	40-135		24-Apr-23 15:57	1
13C-OCDF	IS	64.6	40-135		24-Apr-23 15:57	1
37Cl-2,3,7,8-TCDD	CRS	78.1	40-135		24-Apr-23 15:57	1

Sample ID: ML001-SW-230323
EPA Method 8290A

Client Data		Laboratory Data			
Name:	Friedman & Bruya, Inc.	Lab Sample:	2303225-01	Date Received:	28-Mar-23 09:19
Project:	303396	QC Batch:	B23D041	Date Extracted:	04-Apr-23
Matrix:	Water	Sample Size:	0.982 L	Column:	ZB-DIOXIN
Date Collected:	23-Mar-23 11:10				

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
2,3,7,8-TCDD	ND	1.18	1.81			24-Apr-23 17:28	1
1,2,3,7,8-PeCDD	ND	1.54	5.73			24-Apr-23 17:28	1
1,2,3,4,7,8-HxCDD	ND	2.18	4.26			24-Apr-23 17:28	1
1,2,3,6,7,8-HxCDD	ND	2.46	3.57			24-Apr-23 17:28	1
1,2,3,7,8,9-HxCDD	ND	2.58	4.54			24-Apr-23 17:28	1
1,2,3,4,6,7,8-HpCDD	ND		4.93	0.716		24-Apr-23 17:28	1
OCDD	5.84		16.7		J	24-Apr-23 17:28	1
2,3,7,8-TCDF	ND	0.589	1.81			24-Apr-23 17:28	1
1,2,3,7,8-PeCDF	ND	1.07	5.10			24-Apr-23 17:28	1
2,3,4,7,8-PeCDF	ND	0.975	5.08			24-Apr-23 17:28	1
1,2,3,4,7,8-HxCDF	ND	0.983	7.00			24-Apr-23 17:28	1
1,2,3,6,7,8-HxCDF	ND	0.944	6.42			24-Apr-23 17:28	1
2,3,4,6,7,8-HxCDF	ND	1.09	5.91			24-Apr-23 17:28	1
1,2,3,7,8,9-HxCDF	ND	1.48	5.43			24-Apr-23 17:28	1
1,2,3,4,6,7,8-HpCDF	ND	1.15	6.07			24-Apr-23 17:28	1
1,2,3,4,7,8,9-HpCDF	ND	1.76	5.44			24-Apr-23 17:28	1
OCDF	ND	4.88	11.5			24-Apr-23 17:28	1

Toxic Equivalent

TEQMinWHO2005Dioxin	0.00175
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Totals

Total TCDD	ND	1.18					
Total PeCDD	ND	1.54					
Total HxCDD	ND	2.58					
Total HpCDD	ND			0.716			
Total TCDF	ND	0.589					
Total PeCDF	ND	1.07					
Total HxCDF	ND	1.48					
Total HpCDF	ND	1.76					

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-2,3,7,8-TCDD	IS	58.2	40 - 135		24-Apr-23 17:28	1
13C-1,2,3,7,8-PeCDD	IS	90.7	40 - 135		24-Apr-23 17:28	1
13C-1,2,3,4,7,8-HxCDD	IS	79.1	40 - 135		24-Apr-23 17:28	1
13C-1,2,3,6,7,8-HxCDD	IS	72.0	40 - 135		24-Apr-23 17:28	1
13C-1,2,3,7,8,9-HxCDD	IS	68.6	40 - 135		24-Apr-23 17:28	1
13C-1,2,3,4,6,7,8-HpCDD	IS	68.2	40 - 135		24-Apr-23 17:28	1
13C-OCDD	IS	47.8	40 - 135		24-Apr-23 17:28	1
13C-2,3,7,8-TCDF	IS	74.2	40 - 135		24-Apr-23 17:28	1
13C-1,2,3,7,8-PeCDF	IS	79.2	40 - 135		24-Apr-23 17:28	1
13C-2,3,4,7,8-PeCDF	IS	82.7	40 - 135		24-Apr-23 17:28	1
13C-1,2,3,4,7,8-HxCDF	IS	74.6	40 - 135		24-Apr-23 17:28	1
13C-1,2,3,6,7,8-HxCDF	IS	74.0	40 - 135		24-Apr-23 17:28	1
13C-2,3,4,6,7,8-HxCDF	IS	74.1	40 - 135		24-Apr-23 17:28	1
13C-1,2,3,7,8,9-HxCDF	IS	69.6	40 - 135		24-Apr-23 17:28	1
13C-1,2,3,4,6,7,8-HpCDF	IS	64.5	40 - 135		24-Apr-23 17:28	1
13C-1,2,3,4,7,8,9-HpCDF	IS	61.4	40 - 135		24-Apr-23 17:28	1
13C-OCDF	IS	49.9	40 - 135		24-Apr-23 17:28	1
37Cl-2,3,7,8-TCDD	CRS	64.5	40 - 135		24-Apr-23 17:28	1

EDL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

MDL - Method Detection Limit

Sample ID: Method Blank
EPA Method 1668A
Client Data

Name: Friedman & Bruya, Inc.
Project: 303396
Matrix: Aqueous

Laboratory Data

Lab Sample: B23E167-BLK1
QC Batch: B23E167
Sample Size: 1.00 L
Date Extracted: 15-May-23
Column: ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-1	11.0		1.89			25-May-23 20:01	1
PCB-2	ND	1.23	2.37			25-May-23 20:01	1
PCB-3	ND	1.25	3.08			25-May-23 20:01	1
PCB-4/10	ND	19.2	2.46			25-May-23 20:01	1
PCB-5/8	ND	13.6	3.62			25-May-23 20:01	1
PCB-6	ND	13.3	1.89			25-May-23 20:01	1
PCB-7/9	ND	14.1	2.22			25-May-23 20:01	1
PCB-11	ND	10.6	5.18			25-May-23 20:01	1
PCB-12/13	ND	11.6	3.29			25-May-23 20:01	1
PCB-14	ND	11.6	1.42			25-May-23 20:01	1
PCB-15	ND	11.6	1.98			25-May-23 20:01	1
PCB-16/32	ND		1.65	4.49		25-May-23 20:01	1
PCB-17	ND	1.62	1.44			25-May-23 20:01	1
PCB-18	ND		1.94	7.41		25-May-23 20:01	1
PCB-19	ND	1.83	0.851			25-May-23 20:01	1
PCB-20/21/33	7.36		4.47		J	25-May-23 20:01	1
PCB-22	ND	1.29	2.06			25-May-23 20:01	1
PCB-23	ND	1.37	2.07			25-May-23 20:01	1
PCB-24/27	ND	1.17	1.67			25-May-23 20:01	1
PCB-25	ND	1.33	1.63			25-May-23 20:01	1
PCB-26	ND	1.33	1.85			25-May-23 20:01	1
PCB-28	8.83		6.43		J	25-May-23 20:01	1
PCB-29	ND	1.41	1.62			25-May-23 20:01	1
PCB-30	ND	1.15	1.12			25-May-23 20:01	1
PCB-31	7.23		5.75		J	25-May-23 20:01	1
PCB-34	ND	1.39	1.48			25-May-23 20:01	1
PCB-35	ND	1.57	1.67			25-May-23 20:01	1
PCB-36	ND	1.54	1.44			25-May-23 20:01	1
PCB-37	ND	1.60	1.22			25-May-23 20:01	1
PCB-38	ND	1.56	1.73			25-May-23 20:01	1
PCB-39	ND	1.64	1.60			25-May-23 20:01	1
PCB-40	ND	1.28	2.26			25-May-23 20:01	1
PCB-41/64/71/72	ND		4.25	3.13		25-May-23 20:01	1
PCB-42/59	ND		2.02	1.29		25-May-23 20:01	1
PCB-43/49	3.73		3.88		J	25-May-23 20:01	1
PCB-44	3.28		13.2		J	25-May-23 20:01	1
PCB-45	ND	0.945	1.61			25-May-23 20:01	1
PCB-46	ND	0.984	1.58			25-May-23 20:01	1
PCB-47	ND	0.850	3.22			25-May-23 20:01	1
PCB-48/75	ND	0.706	2.81			25-May-23 20:01	1
PCB-50	ND	0.822	1.90			25-May-23 20:01	1
PCB-51	ND	0.759	1.15			25-May-23 20:01	1
PCB-52/69	ND		15.5	4.61		25-May-23 20:01	1
PCB-53	ND	0.808	1.58			25-May-23 20:01	1
PCB-54	ND	0.677	1.31			25-May-23 20:01	1
PCB-55	ND	0.589	1.24			25-May-23 20:01	1
PCB-56/60	ND		4.70	1.37		25-May-23 20:01	1
PCB-57	ND	0.569	1.09			25-May-23 20:01	1
PCB-58	ND	0.566	1.33			25-May-23 20:01	1
PCB-61/70	ND	0.626	3.10			25-May-23 20:01	1
PCB-62	ND	0.707	1.32			25-May-23 20:01	1
PCB-63	ND	0.631	1.11			25-May-23 20:01	1

Sample ID: Method Blank
EPA Method 1668A
Client Data

Name: Friedman & Bruya, Inc.
Project: 303396
Matrix: Aqueous

Laboratory Data

Lab Sample: B23E167-BLK1
QC Batch: B23E167
Sample Size: 1.00 L
Date Extracted: 15-May-23
Column: ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-65	ND	0.632	1.40			25-May-23 20:01	1
PCB-66/76	ND	0.572	6.10			25-May-23 20:01	1
PCB-67	ND	0.603	1.20			25-May-23 20:01	1
PCB-68	ND	0.617	1.94			25-May-23 20:01	1
PCB-73	ND	0.581	1.44			25-May-23 20:01	1
PCB-74	ND	0.563	1.39			25-May-23 20:01	1
PCB-77	ND	0.740	1.91			25-May-23 20:01	1
PCB-78	ND	0.706	1.22			25-May-23 20:01	1
PCB-79	ND	0.592	1.30			25-May-23 20:01	1
PCB-80	ND	0.582	0.807			25-May-23 20:01	1
PCB-81	ND	0.755	1.14			25-May-23 20:01	1
PCB-82	ND	0.918	1.85			25-May-23 20:01	1
PCB-83	ND	0.569	1.23			25-May-23 20:01	1
PCB-84/92	ND	0.871	1.75			25-May-23 20:01	1
PCB-85/116	ND	0.719	2.13			25-May-23 20:01	1
PCB-86	ND	0.837	2.05			25-May-23 20:01	1
PCB-87/117/125	ND	0.661	2.99			25-May-23 20:01	1
PCB-88/91	ND	0.881	2.32			25-May-23 20:01	1
PCB-89	ND	0.812	1.10			25-May-23 20:01	1
PCB-90/101	3.41		2.23		J	25-May-23 20:01	1
PCB-93	ND	1.05	2.80			25-May-23 20:01	1
PCB-94	ND	0.965	1.79			25-May-23 20:01	1
PCB-95/98/102	ND	0.749	2.16			25-May-23 20:01	1
PCB-96	ND	0.657	1.40			25-May-23 20:01	1
PCB-97	ND	0.789	1.01			25-May-23 20:01	1
PCB-99	ND	0.724	1.97			25-May-23 20:01	1
PCB-100	ND	0.802	1.49			25-May-23 20:01	1
PCB-103	ND	0.838	1.27			25-May-23 20:01	1
PCB-104	ND	0.657	1.09			25-May-23 20:01	1
PCB-105	ND	0.568	1.64			25-May-23 20:01	1
PCB-106/118	ND	0.605	3.03			25-May-23 20:01	1
PCB-107/109	ND	0.528	1.89			25-May-23 20:01	1
PCB-108/112	ND	0.711	2.94			25-May-23 20:01	1
PCB-110	ND	0.591	2.79			25-May-23 20:01	1
PCB-111/115	ND	0.548	2.31			25-May-23 20:01	1
PCB-113	ND	0.571	1.00			25-May-23 20:01	1
PCB-114	ND	0.545	0.980			25-May-23 20:01	1
PCB-119	ND	0.579	0.983			25-May-23 20:01	1
PCB-120	ND	0.494	1.46			25-May-23 20:01	1
PCB-121	ND	0.547	1.73			25-May-23 20:01	1
PCB-122	ND	0.636	1.77			25-May-23 20:01	1
PCB-123	ND	0.585	1.45			25-May-23 20:01	1
PCB-124	ND	0.542	1.22			25-May-23 20:01	1
PCB-126	ND	0.631	1.68			25-May-23 20:01	1
PCB-127	ND	0.558	1.53			25-May-23 20:01	1
PCB-128/162	ND	0.635	1.74			25-May-23 20:01	1
PCB-129	ND	0.832	1.88			25-May-23 20:01	1
PCB-130	ND	0.867	2.25			25-May-23 20:01	1
PCB-131/133	ND	0.747	2.63			25-May-23 20:01	1
PCB-132/161	ND	0.599	2.43			25-May-23 20:01	1
PCB-134/143	ND	0.799	1.76			25-May-23 20:01	1
PCB-135	ND	0.767	2.40			25-May-23 20:01	1

Sample ID: Method Blank
EPA Method 1668A
Client Data

Name: Friedman & Bruya, Inc.
Project: 303396
Matrix: Aqueous

Laboratory Data

Lab Sample: B23E167-BLK1
QC Batch: B23E167
Sample Size: 1.00 L
Date Extracted: 15-May-23
Column: ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-136	ND	0.629	1.62			25-May-23 20:01	1
PCB-137	ND	0.734	1.47			25-May-23 20:01	1
PCB-138/163/164	2.18		2.54		J	25-May-23 20:01	1
PCB-139/149	ND		3.61	1.38		25-May-23 20:01	1
PCB-140	ND	0.850	1.71			25-May-23 20:01	1
PCB-141	ND	0.746	1.16			25-May-23 20:01	1
PCB-142	ND	0.834	1.64			25-May-23 20:01	1
PCB-144	ND	0.802	1.75			25-May-23 20:01	1
PCB-145	ND	0.564	1.86			25-May-23 20:01	1
PCB-146/165	ND	0.607	2.67			25-May-23 20:01	1
PCB-147	ND	0.778	1.61			25-May-23 20:01	1
PCB-148	ND	0.832	1.80			25-May-23 20:01	1
PCB-150	ND	0.594	1.44			25-May-23 20:01	1
PCB-151	ND	0.823	2.18			25-May-23 20:01	1
PCB-152	ND	0.545	1.07			25-May-23 20:01	1
PCB-153	2.25		2.20		J	25-May-23 20:01	1
PCB-154	ND	0.769	1.38			25-May-23 20:01	1
PCB-155	ND	0.650	1.27			25-May-23 20:01	1
PCB-156	ND	0.544	1.64			25-May-23 20:01	1
PCB-157	ND	0.615	1.22			25-May-23 20:01	1
PCB-158/160	ND	0.590	2.40			25-May-23 20:01	1
PCB-159	ND	0.484	1.32			25-May-23 20:01	1
PCB-166	ND	0.515	1.18			25-May-23 20:01	1
PCB-167	ND	0.555	0.889			25-May-23 20:01	1
PCB-168	ND	0.554	0.893			25-May-23 20:01	1
PCB-169	ND	0.688	1.45			25-May-23 20:01	1
PCB-170	ND	0.870	1.52			25-May-23 20:01	1
PCB-171	ND	0.786	1.26			25-May-23 20:01	1
PCB-172	ND	0.761	1.68			25-May-23 20:01	1
PCB-173	ND	0.896	1.42			25-May-23 20:01	1
PCB-174	ND	0.799	1.54			25-May-23 20:01	1
PCB-175	ND	0.751	1.13			25-May-23 20:01	1
PCB-176	ND	0.575	0.816			25-May-23 20:01	1
PCB-177	ND	0.839	1.58			25-May-23 20:01	1
PCB-178	ND	0.771	1.61			25-May-23 20:01	1
PCB-179	ND	0.596	1.06			25-May-23 20:01	1
PCB-180	ND	0.735	1.78			25-May-23 20:01	1
PCB-181	ND	0.720	1.15			25-May-23 20:01	1
PCB-182/187	ND	0.680	2.33			25-May-23 20:01	1
PCB-183	ND	0.703	1.49			25-May-23 20:01	1
PCB-184	ND	0.562	0.951			25-May-23 20:01	1
PCB-185	ND	0.773	1.28			25-May-23 20:01	1
PCB-186	ND	0.520	0.985			25-May-23 20:01	1
PCB-188	ND	0.557	1.06			25-May-23 20:01	1
PCB-189	ND	0.572	1.26			25-May-23 20:01	1
PCB-190	ND	0.665	1.44			25-May-23 20:01	1
PCB-191	ND	0.635	1.85			25-May-23 20:01	1
PCB-192	ND	0.593	1.70			25-May-23 20:01	1
PCB-193	ND	0.650	1.81			25-May-23 20:01	1
PCB-194	ND		2.10	1.01		25-May-23 20:01	1
PCB-195	ND	0.496	1.54			25-May-23 20:01	1
PCB-196/203	ND	0.543	2.34			25-May-23 20:01	1

Sample ID: Method Blank
EPA Method 1668A

Client Data				Laboratory Data			
Name:	Friedman & Bruya, Inc.			Lab Sample:	B23E167-BLK1		
Project:	303396			QC Batch:	B23E167		Date Extracted: 15-May-23
Matrix:	Aqueous			Sample Size:	1.00 L		Column: ZB-1
Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-197	ND	0.425	1.45			25-May-23 20:01	1
PCB-198	ND	0.589	2.07			25-May-23 20:01	1
PCB-199	ND	0.580	1.48			25-May-23 20:01	1
PCB-200	ND	0.449	0.890			25-May-23 20:01	1
PCB-201	ND	0.453	1.33			25-May-23 20:01	1
PCB-202	ND	0.412	1.24			25-May-23 20:01	1
PCB-204	ND	0.429	1.06			25-May-23 20:01	1
PCB-205	ND	0.374	1.56			25-May-23 20:01	1
PCB-206	ND	0.281	1.62			25-May-23 20:01	1
PCB-207	ND	0.214	1.56			25-May-23 20:01	1
PCB-208	ND	0.211	1.53			25-May-23 20:01	1
PCB-209	ND	0.112	1.93			25-May-23 20:01	1
Totals							
Total monoCB	11.0						
Total diCB	ND	19.2					
Total triCB	23.4			35.3			
Total tetraCB	7.01			17.4			
Total pentaCB	3.41						
Total hexaCB	4.43			5.81			
Total heptaCB	ND	0.896					
Total octaCB	ND			1.01			
Total nonaCB	ND	0.281					
DecaCB	ND	0.112					
Total PCB	49.2						
Labeled Standards	Type	% Recovery		Limits	Qualifiers	Analyzed	Dilution
13C-PCB-1	IS	33.1		15 - 150		25-May-23 20:01	1
13C-PCB-3	IS	33.1		15 - 150		25-May-23 20:01	1
13C-PCB-4	IS	29.5		25 - 150		25-May-23 20:01	1
13C-PCB-11	IS	31.1		25 - 150		25-May-23 20:01	1
13C-PCB-9	IS	29.4		25 - 150		25-May-23 20:01	1
13C-PCB-19	IS	43.6		25 - 150		25-May-23 20:01	1
13C-PCB-28	IS	34.1		25 - 150		25-May-23 20:01	1
13C-PCB-32	IS	46.6		25 - 150		25-May-23 20:01	1
13C-PCB-37	IS	30.6		25 - 150		25-May-23 20:01	1
13C-PCB-47	IS	31.1		25 - 150		25-May-23 20:01	1
13C-PCB-52	IS	31.7		25 - 150		25-May-23 20:01	1
13C-PCB-54	IS	31.2		25 - 150		25-May-23 20:01	1
13C-PCB-70	IS	32.5		25 - 150		25-May-23 20:01	1
13C-PCB-77	IS	28.8		25 - 150		25-May-23 20:01	1
13C-PCB-80	IS	31.0		25 - 150		25-May-23 20:01	1
13C-PCB-81	IS	29.0		25 - 150		25-May-23 20:01	1
13C-PCB-95	IS	29.5		25 - 150		25-May-23 20:01	1
13C-PCB-97	IS	30.6		25 - 150		25-May-23 20:01	1
13C-PCB-101	IS	30.7		25 - 150		25-May-23 20:01	1
13C-PCB-104	IS	28.7		25 - 150		25-May-23 20:01	1
13C-PCB-105	IS	25.8		25 - 150		25-May-23 20:01	1
13C-PCB-114	IS	26.4		25 - 150		25-May-23 20:01	1
13C-PCB-118	IS	31.0		25 - 150		25-May-23 20:01	1
13C-PCB-123	IS	31.9		25 - 150		25-May-23 20:01	1
13C-PCB-126	IS	22.9		25 - 150	H	25-May-23 20:01	1
13C-PCB-127	IS	25.8		25 - 150		25-May-23 20:01	1

Sample ID: Method Blank
EPA Method 1668A
Client Data

Name: Friedman & Bruya, Inc.
Project: 303396
Matrix: Aqueous

Laboratory Data

Lab Sample: B23E167-BLK1
QC Batch: B23E167
Sample Size: 1.00 L
Date Extracted: 15-May-23
Column: ZB-1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-PCB-138	IS	33.1	25 - 150		25-May-23 20:01	1
13C-PCB-141	IS	31.9	25 - 150		25-May-23 20:01	1
13C-PCB-153	IS	32.9	25 - 150		25-May-23 20:01	1
13C-PCB-155	IS	34.8	25 - 150		25-May-23 20:01	1
13C-PCB-156	IS	32.2	25 - 150		25-May-23 20:01	1
13C-PCB-157	IS	32.1	25 - 150		25-May-23 20:01	1
13C-PCB-159	IS	34.3	25 - 150		25-May-23 20:01	1
13C-PCB-167	IS	32.0	25 - 150		25-May-23 20:01	1
13C-PCB-169	IS	28.7	25 - 150		25-May-23 20:01	1
13C-PCB-170	IS	31.3	25 - 150		25-May-23 20:01	1
13C-PCB-180	IS	31.9	25 - 150		25-May-23 20:01	1
13C-PCB-188	IS	30.6	25 - 150		25-May-23 20:01	1
13C-PCB-189	IS	32.0	25 - 150		25-May-23 20:01	1
13C-PCB-194	IS	30.0	25 - 150		25-May-23 20:01	1
13C-PCB-202	IS	38.0	25 - 150		25-May-23 20:01	1
13C-PCB-206	IS	35.6	25 - 150		25-May-23 20:01	1
13C-PCB-208	IS	36.7	25 - 150		25-May-23 20:01	1
13C-PCB-209	IS	46.0	25 - 150		25-May-23 20:01	1
13C-PCB-79	CRS	32.9	30 - 135		25-May-23 20:01	1
13C-PCB-178	CRS	47.1	30 - 135		25-May-23 20:01	1

EDL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

MDL - Method Detection Limit

Sample ID: OPR
EPA Method 1668A

Client Data			Laboratory Data			
Name:	Friedman & Bruya, Inc.		Lab Sample:	B23E167-BS1		
Project:	303396		QC Batch:	B23E167	Date Extracted:	15-May-23 07:36
Matrix:	Aqueous		Sample Size:	1.00 L	Column:	ZB-1

Analyte	Amt Found (pg/L)	Spike Amt	% Recovery	Limits	Qualifiers	Analyzed	Dilution
PCB-1	873	1000	87.3	50-150	B	25-May-23 15:59	1
PCB-3	900	1000	90.0	50-150		25-May-23 15:59	1
PCB-4/10	2050	2000	102	50-150		25-May-23 15:59	1
PCB-15	982	1000	98.2	50-150		25-May-23 15:59	1
PCB-19	754	1000	75.4	50-150		25-May-23 15:59	1
PCB-37	1060	1000	106	50-150		25-May-23 15:59	1
PCB-54	863	1000	86.3	50-150		25-May-23 15:59	1
PCB-77	812	1000	81.2	50-150		25-May-23 15:59	1
PCB-81	820	1000	82.0	50-150		25-May-23 15:59	1
PCB-104	836	1000	83.6	50-150		25-May-23 15:59	1
PCB-105	1010	1000	101	50-150		25-May-23 15:59	1
PCB-106/118	1660	2000	83.2	50-150		25-May-23 15:59	1
PCB-114	995	1000	99.5	50-150		25-May-23 15:59	1
PCB-123	828	1000	82.8	50-150		25-May-23 15:59	1
PCB-126	983	1000	98.3	50-150		25-May-23 15:59	1
PCB-155	843	1000	84.3	50-150		25-May-23 15:59	1
PCB-156	836	1000	83.6	50-150		25-May-23 15:59	1
PCB-157	836	1000	83.6	50-150		25-May-23 15:59	1
PCB-167	863	1000	86.3	50-150		25-May-23 15:59	1
PCB-169	850	1000	85.0	50-150		25-May-23 15:59	1
PCB-188	837	1000	83.7	50-150		25-May-23 15:59	1
PCB-189	807	1000	80.7	50-150		25-May-23 15:59	1
PCB-202	836	1000	83.6	50-150		25-May-23 15:59	1
PCB-205	1020	1000	102	50-150		25-May-23 15:59	1
PCB-206	856	1000	85.6	50-150		25-May-23 15:59	1
PCB-208	907	1000	90.7	50-150		25-May-23 15:59	1
PCB-209	777	1000	77.7	50-150		25-May-23 15:59	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-PCB-1	IS	47.7	15-140		25-May-23 15:59	1
13C-PCB-3	IS	46.7	15-140		25-May-23 15:59	1
13C-PCB-4	IS	41.5	30-140		25-May-23 15:59	1
13C-PCB-11	IS	44.3	30-140		25-May-23 15:59	1
13C-PCB-9	IS	41.2	30-140		25-May-23 15:59	1
13C-PCB-19	IS	59.3	30-140		25-May-23 15:59	1
13C-PCB-28	IS	47.1	30-140		25-May-23 15:59	1
13C-PCB-32	IS	66.0	30-140		25-May-23 15:59	1
13C-PCB-37	IS	42.1	30-140		25-May-23 15:59	1
13C-PCB-47	IS	43.9	30-140		25-May-23 15:59	1
13C-PCB-52	IS	45.4	30-140		25-May-23 15:59	1
13C-PCB-54	IS	40.6	30-140		25-May-23 15:59	1
13C-PCB-70	IS	46.6	30-140		25-May-23 15:59	1
13C-PCB-77	IS	44.0	30-140		25-May-23 15:59	1
13C-PCB-80	IS	44.7	30-140		25-May-23 15:59	1
13C-PCB-81	IS	43.1	30-140		25-May-23 15:59	1

Sample ID: OPR
EPA Method 1668A
Client Data

Name: Friedman & Bruya, Inc.
Project: 303396
Matrix: Aqueous

Laboratory Data

Lab Sample: B23E167-BS1
QC Batch: B23E167
Sample Size: 1.00 L
Date Extracted: 15-May-23 07:36
Column: ZB-1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-PCB-95	IS	42.9	30-140		25-May-23 15:59	1
13C-PCB-97	IS	45.9	30-140		25-May-23 15:59	1
13C-PCB-101	IS	45.2	30-140		25-May-23 15:59	1
13C-PCB-104	IS	40.6	30-140		25-May-23 15:59	1
13C-PCB-105	IS	39.0	30-140		25-May-23 15:59	1
13C-PCB-114	IS	39.8	30-140		25-May-23 15:59	1
13C-PCB-118	IS	47.5	30-140		25-May-23 15:59	1
13C-PCB-123	IS	47.9	30-140		25-May-23 15:59	1
13C-PCB-126	IS	35.3	30-140		25-May-23 15:59	1
13C-PCB-127	IS	38.7	30-140		25-May-23 15:59	1
13C-PCB-138	IS	49.6	30-140		25-May-23 15:59	1
13C-PCB-141	IS	47.6	30-140		25-May-23 15:59	1
13C-PCB-153	IS	49.1	30-140		25-May-23 15:59	1
13C-PCB-155	IS	52.6	30-140		25-May-23 15:59	1
13C-PCB-156	IS	47.8	30-140		25-May-23 15:59	1
13C-PCB-157	IS	48.5	30-140		25-May-23 15:59	1
13C-PCB-159	IS	51.0	30-140		25-May-23 15:59	1
13C-PCB-167	IS	48.9	30-140		25-May-23 15:59	1
13C-PCB-169	IS	44.0	30-140		25-May-23 15:59	1
13C-PCB-170	IS	49.7	30-140		25-May-23 15:59	1
13C-PCB-180	IS	50.0	30-140		25-May-23 15:59	1
13C-PCB-188	IS	48.4	30-140		25-May-23 15:59	1
13C-PCB-189	IS	50.2	30-140		25-May-23 15:59	1
13C-PCB-194	IS	47.7	30-140		25-May-23 15:59	1
13C-PCB-202	IS	61.1	30-140		25-May-23 15:59	1
13C-PCB-206	IS	53.3	30-140		25-May-23 15:59	1
13C-PCB-208	IS	57.9	30-140		25-May-23 15:59	1
13C-PCB-209	IS	69.7	30-140		25-May-23 15:59	1
13C-PCB-79	CRS	47.0	25-125		25-May-23 15:59	1
13C-PCB-178	CRS	64.0	25-125		25-May-23 15:59	1

Sample ID: ML001-SW-230323
EPA Method 1668A
Client Data

Name: Friedman & Bruya, Inc.
Project: 303396
Matrix: Water
Date Collected: 23-Mar-23 11:10

Laboratory Data

Lab Sample: 2303225-01
QC Batch: B23E167
Sample Size: 0.859 L
Date Received: 28-Mar-23 09:19
Date Extracted: 15-May-23
Column: ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-1	ND	1.18	2.20			25-May-23 03:23	1
PCB-2	ND		2.76	3.05		25-May-23 03:23	1
PCB-3	ND		3.59	3.30		25-May-23 03:23	1
PCB-4/10	ND	14.9	2.86			25-May-23 03:23	1
PCB-5/8	ND		4.22	42.3		25-May-23 03:23	1
PCB-6	ND	10.3	2.20			25-May-23 03:23	1
PCB-7/9	ND	10.9	2.58			25-May-23 03:23	1
PCB-11	ND	8.77	6.03			25-May-23 03:23	1
PCB-12/13	ND	9.60	3.83			25-May-23 03:23	1
PCB-14	ND	9.56	1.65			25-May-23 03:23	1
PCB-15	ND	9.62	2.31			25-May-23 03:23	1
PCB-16/32	ND		1.92	10.8		25-May-23 03:23	1
PCB-17	13.5		1.68			25-May-23 03:23	1
PCB-18	37.4		2.26			25-May-23 03:23	1
PCB-19	ND		0.991	5.51		25-May-23 03:23	1
PCB-20/21/33	25.8		5.20		B	25-May-23 03:23	1
PCB-22	13.2		2.40			25-May-23 03:23	1
PCB-23	ND	0.954	2.41			25-May-23 03:23	1
PCB-24/27	ND	0.849	1.94			25-May-23 03:23	1
PCB-25	ND		1.90	2.61		25-May-23 03:23	1
PCB-26	7.17		2.15			25-May-23 03:23	1
PCB-28	ND		7.49	23.4		25-May-23 03:23	1
PCB-29	ND	0.988	1.89			25-May-23 03:23	1
PCB-30	ND	0.791	1.30			25-May-23 03:23	1
PCB-31	26.4		6.70		B	25-May-23 03:23	1
PCB-34	ND	0.969	1.72			25-May-23 03:23	1
PCB-35	ND	0.932	1.94			25-May-23 03:23	1
PCB-36	ND	0.913	1.68			25-May-23 03:23	1
PCB-37	6.33		1.42			25-May-23 03:23	1
PCB-38	ND	0.929	2.01			25-May-23 03:23	1
PCB-39	ND	0.973	1.86			25-May-23 03:23	1
PCB-40	ND		2.63	2.97		25-May-23 03:23	1
PCB-41/64/71/72	13.5		4.95		J	25-May-23 03:23	1
PCB-42/59	ND		2.35	4.67		25-May-23 03:23	1
PCB-43/49	11.1		4.52		J, B	25-May-23 03:23	1
PCB-44	22.8		15.4		B	25-May-23 03:23	1
PCB-45	ND		1.87	3.83		25-May-23 03:23	1
PCB-46	ND		1.84	1.15		25-May-23 03:23	1
PCB-47	3.61		3.75		J	25-May-23 03:23	1
PCB-48/75	ND		3.27	2.62		25-May-23 03:23	1
PCB-50	ND	0.532	2.21			25-May-23 03:23	1
PCB-51	ND		1.34	0.704		25-May-23 03:23	1
PCB-52/69	25.5		18.0			25-May-23 03:23	1
PCB-53	ND		1.84	3.27		25-May-23 03:23	1
PCB-54	ND	0.439	1.53			25-May-23 03:23	1
PCB-55	ND	0.389	1.44			25-May-23 03:23	1
PCB-56/60	5.27		5.47		J	25-May-23 03:23	1
PCB-57	ND	0.372	1.27			25-May-23 03:23	1
PCB-58	ND	0.370	1.55			25-May-23 03:23	1
PCB-61/70	14.8		3.61			25-May-23 03:23	1
PCB-62	ND	0.478	1.54			25-May-23 03:23	1
PCB-63	ND	0.412	1.29			25-May-23 03:23	1

Sample ID: ML001-SW-230323
EPA Method 1668A
Client Data

Name: Friedman & Bruya, Inc.
Project: 303396
Matrix: Water
Date Collected: 23-Mar-23 11:10

Laboratory Data

Lab Sample: 2303225-01
QC Batch: B23E167
Sample Size: 0.859 L
Date Received: 28-Mar-23 09:19
Date Extracted: 15-May-23
Column: ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-65	ND	0.428	1.63			25-May-23 03:23	1
PCB-66/76	7.07		7.10		J	25-May-23 03:23	1
PCB-67	ND	0.394	1.40			25-May-23 03:23	1
PCB-68	ND	0.417	2.26			25-May-23 03:23	1
PCB-73	ND	0.406	1.68			25-May-23 03:23	1
PCB-74	ND		1.62	3.78		25-May-23 03:23	1
PCB-77	ND	0.461	2.22			25-May-23 03:23	1
PCB-78	ND	0.448	1.42			25-May-23 03:23	1
PCB-79	ND	0.391	1.51			25-May-23 03:23	1
PCB-80	ND	0.385	0.940			25-May-23 03:23	1
PCB-81	ND	0.479	1.33			25-May-23 03:23	1
PCB-82	4.20		2.15		J	25-May-23 03:23	1
PCB-83	ND	0.617	1.43			25-May-23 03:23	1
PCB-84/92	ND		2.04	11.8		25-May-23 03:23	1
PCB-85/116	3.58		2.48		J	25-May-23 03:23	1
PCB-86	ND	0.907	2.39			25-May-23 03:23	1
PCB-87/117/125	ND		3.48	5.88		25-May-23 03:23	1
PCB-88/91	ND		2.70	1.76		25-May-23 03:23	1
PCB-89	ND	0.904	1.28			25-May-23 03:23	1
PCB-90/101	22.2		2.60		B	25-May-23 03:23	1
PCB-93	ND	1.12	3.26			25-May-23 03:23	1
PCB-94	ND	1.02	2.08			25-May-23 03:23	1
PCB-95/98/102	21.7		2.52			25-May-23 03:23	1
PCB-96	ND	0.656	1.63			25-May-23 03:23	1
PCB-97	ND		1.18	6.19		25-May-23 03:23	1
PCB-99	7.53		2.29			25-May-23 03:23	1
PCB-100	ND	0.801	1.73			25-May-23 03:23	1
PCB-103	ND	0.838	1.48			25-May-23 03:23	1
PCB-104	ND	0.657	1.27			25-May-23 03:23	1
PCB-105	7.67		1.91			25-May-23 03:23	1
PCB-106/118	16.3		3.53			25-May-23 03:23	1
PCB-107/109	ND	0.627	2.20			25-May-23 03:23	1
PCB-108/112	1.33		3.42		J	25-May-23 03:23	1
PCB-110	25.5		3.25			25-May-23 03:23	1
PCB-111/115	ND	0.594	2.69			25-May-23 03:23	1
PCB-113	ND	0.636	1.16			25-May-23 03:23	1
PCB-114	ND	0.715	1.14			25-May-23 03:23	1
PCB-119	ND	0.628	1.14			25-May-23 03:23	1
PCB-120	ND	0.536	1.70			25-May-23 03:23	1
PCB-121	ND	0.581	2.01			25-May-23 03:23	1
PCB-122	ND	0.833	2.06			25-May-23 03:23	1
PCB-123	ND	0.695	1.69			25-May-23 03:23	1
PCB-124	ND	0.645	1.42			25-May-23 03:23	1
PCB-126	ND	0.684	1.96			25-May-23 03:23	1
PCB-127	ND	0.699	1.78			25-May-23 03:23	1
PCB-128/162	ND		2.03	3.18		25-May-23 03:23	1
PCB-129	ND	0.921	2.19			25-May-23 03:23	1
PCB-130	ND	1.03	2.62			25-May-23 03:23	1
PCB-131/133	ND	0.855	3.06			25-May-23 03:23	1
PCB-132/161	6.03		2.83		J	25-May-23 03:23	1
PCB-134/143	ND	0.914	2.05			25-May-23 03:23	1
PCB-135	ND	0.812	2.79			25-May-23 03:23	1

Sample ID: ML001-SW-230323
EPA Method 1668A
Client Data

Name: Friedman & Bruya, Inc.
Project: 303396
Matrix: Water
Date Collected: 23-Mar-23 11:10

Laboratory Data

Lab Sample: 2303225-01
QC Batch: B23E167
Sample Size: 0.859 L
Date Received: 28-Mar-23 09:19
Date Extracted: 15-May-23
Column: ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-136	1.99		1.89		J	25-May-23 03:23	1
PCB-137	ND	0.876	1.71			25-May-23 03:23	1
PCB-138/163/164	16.0		2.96		J, B	25-May-23 03:23	1
PCB-139/149	13.4		4.20			25-May-23 03:23	1
PCB-140	ND	0.900	1.99			25-May-23 03:23	1
PCB-141	4.23		1.35		J	25-May-23 03:23	1
PCB-142	ND	0.955	1.91			25-May-23 03:23	1
PCB-144	ND	0.849	2.04			25-May-23 03:23	1
PCB-145	ND	0.597	2.17			25-May-23 03:23	1
PCB-146/165	ND		3.11	2.00		25-May-23 03:23	1
PCB-147	ND	0.823	1.87			25-May-23 03:23	1
PCB-148	ND	0.881	2.10			25-May-23 03:23	1
PCB-150	ND	0.628	1.68			25-May-23 03:23	1
PCB-151	ND		2.54	2.78		25-May-23 03:23	1
PCB-152	ND	0.576	1.25			25-May-23 03:23	1
PCB-153	11.9		2.56		B	25-May-23 03:23	1
PCB-154	ND	0.814	1.61			25-May-23 03:23	1
PCB-155	ND	0.688	1.48			25-May-23 03:23	1
PCB-156	ND	0.609	1.91			25-May-23 03:23	1
PCB-157	ND	0.708	1.42			25-May-23 03:23	1
PCB-158/160	ND	0.653	2.79			25-May-23 03:23	1
PCB-159	ND	0.567	1.54			25-May-23 03:23	1
PCB-166	ND	0.602	1.37			25-May-23 03:23	1
PCB-167	ND	0.644	1.04			25-May-23 03:23	1
PCB-168	ND	0.634	1.04			25-May-23 03:23	1
PCB-169	ND	0.708	1.69			25-May-23 03:23	1
PCB-170	ND		1.77	3.09		25-May-23 03:23	1
PCB-171	ND	0.724	1.47			25-May-23 03:23	1
PCB-172	ND	0.701	1.96			25-May-23 03:23	1
PCB-173	ND	0.826	1.65			25-May-23 03:23	1
PCB-174	ND		1.79	3.94		25-May-23 03:23	1
PCB-175	ND	0.657	1.32			25-May-23 03:23	1
PCB-176	ND	0.503	0.950			25-May-23 03:23	1
PCB-177	ND		1.84	1.91		25-May-23 03:23	1
PCB-178	ND	0.675	1.87			25-May-23 03:23	1
PCB-179	ND	0.521	1.23			25-May-23 03:23	1
PCB-180	ND		2.07	7.40		25-May-23 03:23	1
PCB-181	ND	0.663	1.34			25-May-23 03:23	1
PCB-182/187	ND		2.71	3.97		25-May-23 03:23	1
PCB-183	ND		1.73	1.12		25-May-23 03:23	1
PCB-184	ND	0.492	1.11			25-May-23 03:23	1
PCB-185	ND	0.712	1.49			25-May-23 03:23	1
PCB-186	ND	0.455	1.15			25-May-23 03:23	1
PCB-188	ND	0.487	1.23			25-May-23 03:23	1
PCB-189	ND	0.478	1.47			25-May-23 03:23	1
PCB-190	ND	0.575	1.68			25-May-23 03:23	1
PCB-191	ND	0.585	2.15			25-May-23 03:23	1
PCB-192	ND	0.546	1.98			25-May-23 03:23	1
PCB-193	ND	0.599	2.11			25-May-23 03:23	1
PCB-194	ND		2.45	2.94		25-May-23 03:23	1
PCB-195	1.09		1.79		J	25-May-23 03:23	1
PCB-196/203	2.85		2.72		J	25-May-23 03:23	1

Sample ID: ML001-SW-230323
EPA Method 1668A
Client Data

Name: Friedman & Bruya, Inc.
Project: 303396
Matrix: Water
Date Collected: 23-Mar-23 11:10

Laboratory Data

Lab Sample: 2303225-01
QC Batch: B23E167
Sample Size: 0.859 L
Date Received: 28-Mar-23 09:19
Date Extracted: 15-May-23
Column: ZB-1

Analyte	Conc. (pg/L)	EDL	MDL	EMPC	Qualifiers	Analyzed	Dilution
PCB-197	ND	0.565	1.69			25-May-23 03:23	1
PCB-198	ND	0.783	2.41			25-May-23 03:23	1
PCB-199	ND		1.72	1.96		25-May-23 03:23	1
PCB-200	ND	0.598	1.04			25-May-23 03:23	1
PCB-201	ND	0.603	1.55			25-May-23 03:23	1
PCB-202	ND	0.548	1.44			25-May-23 03:23	1
PCB-204	ND	0.571	1.23			25-May-23 03:23	1
PCB-205	ND	0.507	1.82			25-May-23 03:23	1
PCB-206	ND		1.89	0.714		25-May-23 03:23	1
PCB-207	ND	0.216	1.82			25-May-23 03:23	1
PCB-208	ND		1.78	0.636		25-May-23 03:23	1
PCB-209	ND		2.25	0.371		25-May-23 03:23	1

Totals

Total monoCB	ND			6.35			
Total diCB	ND			42.3			
Total triCB	130			172			
Total tetraCB	104			127			
Total pentaCB	110			136			
Total hexaCB	53.5			61.5			
Total heptaCB	ND			21.4			
Total octaCB	3.94			8.84			
Total nonaCB	ND			1.35			
DecaCB	ND			0.371			
Total PCB	401						

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-PCB-1	IS	65.0	15 - 150		25-May-23 03:23	1
13C-PCB-3	IS	63.0	15 - 150		25-May-23 03:23	1
13C-PCB-4	IS	57.3	25 - 150		25-May-23 03:23	1
13C-PCB-11	IS	58.4	25 - 150		25-May-23 03:23	1
13C-PCB-9	IS	57.9	25 - 150		25-May-23 03:23	1
13C-PCB-19	IS	71.4	25 - 150		25-May-23 03:23	1
13C-PCB-28	IS	49.1	25 - 150		25-May-23 03:23	1
13C-PCB-32	IS	70.0	25 - 150		25-May-23 03:23	1
13C-PCB-37	IS	51.7	25 - 150		25-May-23 03:23	1
13C-PCB-47	IS	59.1	25 - 150		25-May-23 03:23	1
13C-PCB-52	IS	58.5	25 - 150		25-May-23 03:23	1
13C-PCB-54	IS	59.6	25 - 150		25-May-23 03:23	1
13C-PCB-70	IS	60.4	25 - 150		25-May-23 03:23	1
13C-PCB-77	IS	55.5	25 - 150		25-May-23 03:23	1
13C-PCB-80	IS	57.6	25 - 150		25-May-23 03:23	1
13C-PCB-81	IS	54.8	25 - 150		25-May-23 03:23	1
13C-PCB-95	IS	59.3	25 - 150		25-May-23 03:23	1
13C-PCB-97	IS	60.4	25 - 150		25-May-23 03:23	1
13C-PCB-101	IS	57.8	25 - 150		25-May-23 03:23	1
13C-PCB-104	IS	61.5	25 - 150		25-May-23 03:23	1
13C-PCB-105	IS	57.9	25 - 150		25-May-23 03:23	1
13C-PCB-114	IS	55.3	25 - 150		25-May-23 03:23	1
13C-PCB-118	IS	57.9	25 - 150		25-May-23 03:23	1
13C-PCB-123	IS	59.3	25 - 150		25-May-23 03:23	1
13C-PCB-126	IS	53.1	25 - 150		25-May-23 03:23	1
13C-PCB-127	IS	57.4	25 - 150		25-May-23 03:23	1

Sample ID: ML001-SW-230323
EPA Method 1668A

Client Data			Laboratory Data			
Name:	Friedman & Bruya, Inc.		Lab Sample:	2303225-01	Date Received:	28-Mar-23 09:19
Project:	303396		QC Batch:	B23E167	Date Extracted:	15-May-23
Matrix:	Water		Sample Size:	0.859 L	Column:	ZB-1
Date Collected:	23-Mar-23 11:10					
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Analyzed	Dilution
13C-PCB-138	IS	60.7	25 - 150		25-May-23 03:23	1
13C-PCB-141	IS	59.6	25 - 150		25-May-23 03:23	1
13C-PCB-153	IS	60.3	25 - 150		25-May-23 03:23	1
13C-PCB-155	IS	66.0	25 - 150		25-May-23 03:23	1
13C-PCB-156	IS	61.4	25 - 150		25-May-23 03:23	1
13C-PCB-157	IS	60.8	25 - 150		25-May-23 03:23	1
13C-PCB-159	IS	63.4	25 - 150		25-May-23 03:23	1
13C-PCB-167	IS	61.2	25 - 150		25-May-23 03:23	1
13C-PCB-169	IS	56.4	25 - 150		25-May-23 03:23	1
13C-PCB-170	IS	60.2	25 - 150		25-May-23 03:23	1
13C-PCB-180	IS	61.1	25 - 150		25-May-23 03:23	1
13C-PCB-188	IS	60.5	25 - 150		25-May-23 03:23	1
13C-PCB-189	IS	64.4	25 - 150		25-May-23 03:23	1
13C-PCB-194	IS	56.1	25 - 150		25-May-23 03:23	1
13C-PCB-202	IS	64.6	25 - 150		25-May-23 03:23	1
13C-PCB-206	IS	57.9	25 - 150		25-May-23 03:23	1
13C-PCB-208	IS	60.4	25 - 150		25-May-23 03:23	1
13C-PCB-209	IS	70.0	25 - 150		25-May-23 03:23	1
13C-PCB-79	CRS	59.2	30 - 135		25-May-23 03:23	1
13C-PCB-178	CRS	73.3	30 - 135		25-May-23 03:23	1

EDL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

MDL - Method Detection Limit

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection Limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
MDL	Method Detection Limit
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
RL	For 537.1, the reported RLs are the MRLs.
TEQ	Toxic Equivalency, sum of the toxic equivalency factors (TEF) multiplied by the sample concentrations.
TEQMax	TEQ calculation that uses the detection limit as the concentration for non-detects
TEQMin	TEQ calculation that uses zero as the concentration for non-detects
TEQRisk	TEQ calculation that uses ½ 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.

2303225 2.201

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

Page # _____ of _____

~~X~~ Standard TAT _____
RUSH _____

Rush charges authorized by: _____

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
	Michael Erdahl	Friedman & Bruya	5/10/13	1000AM.
Received by: <u>Kelin Wadsworth</u>	<u>Kelin Wadsworth</u>	<u>Entropy-EDI</u>	<u>05/11/13</u>	<u>0913</u>
Relinquished by:				
Received by:				

24 of 28

2303225 3.6°C

of f

A-Enthalpy - CA

PROJECT NAME/NO.

PO#

303396

D-222

REMARKS

Please Email Results /

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

TURNAROUND TIME
Standard TAT _____
RUSH _____
Dish charges authorized by: _____

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
	Michael Erdahl	Friedman & Bruya	3/27/13	1143
Received by: 	Karen V. Hoyle	Erdahl & SON	07/11/13	09:15
Relinquished by:				
Received by:				

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

Work Order 2303225

Sample Log-In Checklist



Page # 1 of 2
kw 05/12/23

Work Order #: 2303225

TAT Std

Samples Arrival:	Date/Time <u>03/28/23 09:19</u>	Initials: <u>kw</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>P12</u>
Delivered By:	FedEx	UPS	On Trac
	GLS	DHL	Hand Delivered
Other			
Preservation:	<u>Ice</u>	Blue Ice	Techni Ice
			Dry Ice
			None
Temp °C: <u>3.8</u> (uncorrected)	Probe used: Y / <u>N</u>		Thermometer ID: <u>IR-4</u>
Temp °C: <u>3.6</u> (corrected)			

	YES	NO	NA
Shipping Container(s) Intact?	☒		
Shipping Custody Seals Intact?			☒
Airbill <u>2052</u> Trk # <u>8176 4016 9767</u>	☒		
Shipping Documentation Present?	☒		
Shipping Container	Enthalpy	<u>Client</u>	Retain
		<u>Return</u>	Dispose
Chain of Custody / Sample Documentation Present?	☒		
Chain of Custody / Sample Documentation Complete?	☒		
Holding Time Acceptable?	☒		
Logged In:	Date/Time <u>03/28/23 1254</u>	Initials: <u>kw</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>B-2/G-2</u>
COC Anomaly/Sample Acceptance Form completed?		☒	☒

Comments:

Sample Log-In Checklist



Page # 2 of 2

Work Order #: 2303225

TAT Std

Samples Arrival:	Date/Time		Initials:		Location: <u>WR-2</u>		
	<u>05/11/23 0913</u>		<u>KW</u>		Shelf/Rack: <u>N/A</u>		
Delivered By:	<u>FedEx</u>	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	<u>Ice</u>		Blue Ice		Techni Ice	Dry Ice	None
Temp °C: <u>4.6</u>	(uncorrected)		Probe used: Y / <u>N</u>			Thermometer ID: <u>IR-4</u>	
Temp °C: <u>2.2</u>	(corrected)						

	YES	NO	NA
Shipping Container(s) Intact?	☒	☐	☐
Shipping Custody Seals Intact?	☐	☒	☒
Airbill <u> </u> Trk # <u>8175 1926 0033</u>	☒	☐	☐
Shipping Documentation Present?	☒	☐	☐
Shipping Container	<u>Enthalpy</u>	Client	<u>Retain</u>
Chain of Custody / Sample Documentation Present?	☒	☐	☐
Chain of Custody / Sample Documentation Complete?	☒	☐	☐
Holding Time Acceptable?	☒	☐	☐
Logged In:	Date/Time		Initials:
<u>03/20/23</u>	<u>1254</u>		<u>KW</u>
	Location: <u>WR-2</u>		Shelf/Rack: <u>B-2/G-2</u>
COC Anomaly/Sample Acceptance Form completed?			
	☐	☒	☒

Comments: Ⓐ Originally logged by KW on 03/20/23. Backup volume received in this shipment. Backup volume added on 05/12/23 at 1525.
KW 05/12/23

SampleID	SampleName	Container	BaseMatrix	SampleComments
1	Sample 1	1	1	1
2	Sample 2	2	2	2
3	Sample 3	3	3	3
4	Sample 4	4	4	4
5	Sample 5	5	5	5
6	Sample 6	6	6	6
7	Sample 7	7	7	7
8	Sample 8	8	8	8
9	Sample 9	9	9	9
10	Sample 10	10	10	10
11	Sample 11	11	11	11
12	Sample 12	12	12	12
13	Sample 13	13	13	13
14	Sample 14	14	14	14
15	Sample 15	15	15	15
16	Sample 16	16	16	16
17	Sample 17	17	17	17
18	Sample 18	18	18	18
19	Sample 19	19	19	19
20	Sample 20	20	20	20
21	Sample 21	21	21	21
22	Sample 22	22	22	22
23	Sample 23	23	23	23
24	Sample 24	24	24	24
25	Sample 25	25	25	25
26	Sample 26	26	26	26
27	Sample 27	27	27	27
28	Sample 28	28	28	28
29	Sample 29	29	29	29
30	Sample 30	30	30	30
31	Sample 31	31	31	31
32	Sample 32	32	32	32
33	Sample 33	33	33	33
34	Sample 34	34	34	34
35	Sample 35	35	35	35
36	Sample 36	36	36	36
37	Sample 37	37	37	37
38	Sample 38	38	38	38
39	Sample 39	39	39	39
40	Sample 40	40	40	40
41	Sample 41	41	41	41
42	Sample 42	42	42	42
43	Sample 43	43	43	43
44	Sample 44	44	44	44
45	Sample 45	45	45	45
46	Sample 46	46	46	46
47	Sample 47	47	47	47
48	Sample 48	48	48	48
49	Sample 49	49	49	49
50	Sample 50	50	50	50
51	Sample 51	51	51	51
52	Sample 52	52	52	52
53	Sample 53	53	53	53
54	Sample 54	54	54	54
55	Sample 55	55	55	55
56	Sample 56	56	56	56
57	Sample 57	57	57	57
58	Sample 58	58	58	58
59	Sample 59	59	59	59
60	Sample 60	60	60	60
61	Sample 61	61	61	61
62	Sample 62	62	62	62
63	Sample 63	63	63	63
64	Sample 64	64	64	64
65	Sample 65	65	65	65
66	Sample 66	66	66	66
67	Sample 67	67	67	67
68	Sample 68	68	68	68
69	Sample 69	69	69	69
70	Sample 70	70	70	70
71	Sample 71	71	71	71
72	Sample 72	72	72	72
73	Sample 73	73	73	73
74	Sample 74	74	74	74
75	Sample 75	75	75	75
76	Sample 76	76	76	76
77	Sample 77	77	77	77
78	Sample 78	78	78	78
79	Sample 79	79	79	79
80	Sample 80	80	80	80
81	Sample 81	81	81	81
82	Sample 82	82	82	82
83	Sample 83	83	83	83
84				

Sample Comments

Aqueous

① Received Backup Volume on 05/12/13. (1-120ml jar) ~~per~~
Labeled and reconciled by KW on 05/12/13
KW 05/12/13.

	Yes	No	NA
Sample Container Intact?	☒	☐	☐
Sample Custody Seals Intact?	☐	☒	☒
Adequate Sample Volume?	☒	☐	☐
Container Type Appropriate for Analysis(es)	☒	☐	☐

Comments:

Preservation Documented:	Na2S2O3	Trizma	NH4CH3CO2	None	Other
				☒	

Verified by/Date: KW 03/20/23

KW 03/28/23
WLS 03/28/23



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 303396
Work Order Number: 2303580

April 03, 2023

Attention Michael Erdahl:

Fremont Analytical, Inc. received 1 sample(s) on 3/24/2023 for the analyses presented in the following report.

Total Metals by EPA Method 200.8

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Original

www.fremontanalytical.com



Date: 04/03/2023

CLIENT: Friedman & Bruya
Project: 303396
Work Order: 2303580

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2303580-001	M1-001-SW-230323	03/23/2023 11:10 AM	03/24/2023 3:50 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

CLIENT: Friedman & Bruya
Project: 303396

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Analytical Report

Work Order: 2303580
Date Reported: 4/3/2023

CLIENT: Friedman & Bruya
Project: 303396

Lab ID: 2303580-001

Collection Date: 3/23/2023 11:10:00 AM

Client Sample ID: M1-001-SW-230323

Matrix: Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
----------	--------	----	------	-------	----	---------------

Total Metals by EPA Method 200.8

Batch ID: 39887

Analyst: JR

Aluminum	16.6	10.0		µg/L	1	3/31/2023 6:38:00 PM
----------	------	------	--	------	---	----------------------

Work Order: 2303580
CLIENT: Friedman & Bruya
Project: 303396

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID: MB-39887		SampType: MBLK		Units: µg/L		Prep Date: 3/31/2023			RunNo: 82873			
Client ID: MBLKW		Batch ID: 39887					Analysis Date: 3/31/2023			SeqNo: 1724295		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aluminum ND 10.0

Sample ID: LCS-39887		SampType: LCS			Units: µg/L		Prep Date: 3/31/2023			RunNo: 82873		
Client ID: LCSW		Batch ID: 39887			Analysis Date: 3/31/2023			SeqNo: 1724296				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aluminum 1,010 10.0 1,000 0 101 85 115

Sample ID: 2303530-001ADUP		SampType: DUP			Units: µg/L		Prep Date: 3/31/2023			RunNo: 82873		
Client ID: BATCH		Batch ID: 39887			Analysis Date: 3/31/2023			SeqNo: 1724298				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aluminum 884 10.0 877.1 0.822 30

Sample ID: 2303530-001AMS		SampType: MS			Units: µg/L		Prep Date: 3/31/2023			RunNo: 82873		
Client ID: BATCH		Batch ID: 39887			Analysis Date: 3/31/2023			SeqNo: 1724299				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aluminum 2,080 10.0 1,000 877.1 120 70 130

Sample ID: 2303530-001AMSD		SampType: MSD			Units: µg/L		Prep Date: 3/31/2023			RunNo: 82873		
Client ID: BATCH		Batch ID: 39887			Analysis Date: 3/31/2023					SeqNo: 1724300		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aluminum 2,090 10.0 1,000 877.1 121 70 130 2,082 0.363 30

Work Order: 2303580
CLIENT: Friedman & Bruya
Project: 303396

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID: 2303569-001CMS		SampType: MS			Units: µg/L		Prep Date: 3/31/2023		RunNo: 82873		
Client ID: BATCH		Batch ID: 39887			Analysis Date: 3/31/2023				SeqNo: 1724355		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1.190	10.0	1.000	108.8	108	70	130				

Client Name: **FB**

Work Order Number: **2303580**

Logged by: **Morgan Wilson**

Date Received: **3/24/2023 3:50:00 PM**

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes ☐ No ☐ Not Present ☒
6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
7. Were all items received at a temperature of >2°C to 6°C * Yes ☒ No ☐ NA ☐
8. Sample(s) in proper container(s)? Yes ☒ No ☐
9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
10. Are samples properly preserved? Yes ☒ No ☐
11. Was preservative added to bottles? Yes ☒ No ☐ NA ☐
HNO3
12. Is there headspace in the VOA vials? Yes ☐ No ☐ NA ☒
13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
14. Does paperwork match bottle labels? Yes ☒ No ☐
15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
16. Is it clear what analyses were requested? Yes ☒ No ☐
17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp °C
Sample	0.7

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

2302500

11

SUBCONTRACTOR

PROJECT NAME/NO.

363396

☒ Standard TAT
RUSH _____

REMARKS

Please Email Results

Dispose after 30 days

Return samples

Will call with instructions

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
	Michael Erdahl	Friedman & Bryua	3/24/13	0910
	Emma Truck	Tremont Analytical	3/24/13	15:50
Received by:				
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				
Relinquished by:				

Page 9 of 9

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

November 20, 2024

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the results from the testing of material submitted on November 13, 2024 from the 1355-19001-03, F&BI 411197 project. There are 10 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Neil Woller, Paul Trone, Evan Bruggeman
ENW1120R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 13, 2024 by Friedman & Bruya, Inc. from the Evren Northwest 1355-19001-03, F&BI 411197 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
411197 -01	SW-241111

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SW-241111	Client:	Evren Northwest
Date Received:	11/13/24	Project:	1355-19001-03, F&BI 411197
Date Extracted:	11/14/24	Lab ID:	411197-01
Date Analyzed:	11/14/24	Data File:	111407.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	75	11	173
2-Fluorobiphenyl	80	25	128
2,4,6-Tribromophenol	81	10	140
Terphenyl-d14	84	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-03, F&BI 411197
Date Extracted:	11/14/24	Lab ID:	04-2815 mb3
Date Analyzed:	11/14/24	Data File:	111406.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	77	11	173
2-Fluorobiphenyl	78	25	128
2,4,6-Tribromophenol	67	10	140
Terphenyl-d14	74	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	SW-241111	Client:	Evren Northwest
Date Received:	11/13/24	Project:	1355-19001-03, F&BI 411197
Date Extracted:	11/15/24	Lab ID:	411197-01
Date Analyzed:	11/16/24	Data File:	411197-01.263
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Arsenic	<1
Manganese	14

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-03, F&BI 411197
Date Extracted:	11/15/24	Lab ID:	I4-988 mb
Date Analyzed:	11/15/24	Data File:	I4-988 mb.063
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Arsenic	<1
Manganese	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/20/24
Date Received: 11/13/24
Project: 1355-19001-03, F&BI 411197
Date Extracted: 11/15/24
Date Analyzed: 11/15/24

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Results Reported as mg/L (ppm)

<u>Sample ID</u> Laboratory ID	Total Suspended <u>Solids</u>
SW-241111 411197-01	67
Method Blank I4-0973 MB2	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/20/24

Date Received: 11/13/24

Project: 1355-19001-03, F&BI 411197

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	10	67	64	58-93	5
2-Methylnaphthalene	ug/L (ppb)	10	70	66	63-97	6
1-Methylnaphthalene	ug/L (ppb)	10	71	67	62-99	6
Acenaphthylene	ug/L (ppb)	10	86	84	68-111	2
Acenaphthene	ug/L (ppb)	10	83	80	67-104	4
Fluorene	ug/L (ppb)	10	90	86	70-130	5
Phenanthrene	ug/L (ppb)	10	93	89	70-130	4
Anthracene	ug/L (ppb)	10	94	89	70-130	5
Fluoranthene	ug/L (ppb)	10	89	87	70-130	2
Pyrene	ug/L (ppb)	10	84	79	70-130	6
Benz(a)anthracene	ug/L (ppb)	10	87	85	70-130	2
Chrysene	ug/L (ppb)	10	91	89	70-130	2
Benzo(a)pyrene	ug/L (ppb)	10	93	90	70-130	3
Benzo(b)fluoranthene	ug/L (ppb)	10	91	86	70-130	6
Benzo(k)fluoranthene	ug/L (ppb)	10	91	89	70-130	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	10	102	98	70-130	4
Dibenz(a,h)anthracene	ug/L (ppb)	10	98	95	70-130	3
Benzo(g,h,i)perylene	ug/L (ppb)	10	92	90	68-131	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/20/24

Date Received: 11/13/24

Project: 1355-19001-03, F&BI 411197

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 411132-05 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	22.8	107 b	124 b	70-130	15 b
Manganese	ug/L (ppb)	10	1,310	125 b	998 b	70-130	155 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	99	85-115
Manganese	ug/L (ppb)	10	95	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/20/24

Date Received: 11/13/24

Project: 1355-19001-03, F&BI 411197

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR
TOTAL SUSPENDED SOLIDS BY METHOD 2540D**

Laboratory Code: 411153-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
TSS	mg/L (ppm)	42	43	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L (ppm)	20	96	35-146

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

$$\frac{K_f}{F_2}$$

7

Dispose after 30 days
Archive Samples
Other_____

Notes

☒

Samples received at	3	00
---------------------	---	----

TIME

Seattle, WA 98119-2029

Ph. (206) 285-8282

Received by:

Andh Phau

EBI

11/13/24

11:46

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 411197 CLIENT Evren INITIALS/ AP
DATE: 11/13/24

If custody seals are present on cooler, are they intact? ☒ NA ☐ YES ☐ NO

Cooler/Sample temperature 3 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? ☒ YES ☐ NO

How did samples arrive?
☐ Over the Counter ☐ Picked up by F&BI ☒ FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? ☒ YES ☐ NO Initials/ NP
*or other representative documents, letters, and/or shipping memos Date: 11/13

Number of days samples have been sitting prior to receipt at laboratory 2 days

Are the samples clearly identified? (explain "no" answer below) ☒ YES ☐ NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) ☒ YES ☐ NO

Were appropriate sample containers used? ☒ YES ☐ NO ☐ Unknown

If custody seals are present on samples, are they intact? ☒ NA ☐ YES ☐ NO

Are samples requiring no headspace, headspace free? ☒ NA ☐ YES ☐ NO

Is the following information provided on the COC, and does it match the sample label? (explain "no" answer below)

Sample ID's	☒ Yes ☐ No	☐ Not on COC/label
Date Sampled	☒ Yes ☐ No	☐ Not on COC/label
Time Sampled	☒ Yes ☐ No	☐ Not on COC/label
# of Containers	☒ Yes ☐ No	
Relinquished	☒ Yes ☐ No	
Requested analysis	☒ Yes ☐ On Hold	

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? ☒ NA ☐ YES ☐ NO

Number of unused TO15 canisters _____ Number of unused TO17 tubes _____

GLS.

Ship From:

EVREN
DAN SAJKKO
40 SE 24TH AVE SUITE A
PORTLAND, OR 97214

Ship To:

FRIEDMAN & BRUYA, INC.
SAMPLE RECEIVING
5500 4TH AVENUE SOUTH
SEATTLE, WA, 98108

COD: \$0.00

Weight: 0 lb(s)

Dimensions:

Reference:

Delivery Instructions:

Signature Type: NOT REQUIRED

800-322-5555
www.gls-us.com

Tracking #: 562171551

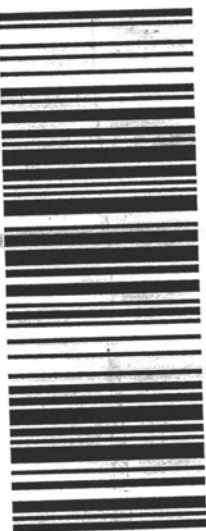


PDS

SEATTLE

S06437C

18396890



KNT WA980-7C0

Print Date : 10/24/24 15:40 PM

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Elizabeth Webber-Bruya
Ann Webber-Bruya
Michael Erdahl
Vineta Mills
Eric Young

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

March 20, 2025

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the results from the testing of material submitted on March 13, 2025 from the 1355-19001-03, F&BI 503190 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Paul Trone, Evan Bruggeman
ENW0320R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 13, 2025 by Friedman & Bruya, Inc. from the Evren Northwest 1355-19001-03, F&BI 503190 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

503190 -01

Evren Northwest

ML001-SW-250312

Several metals in the 6020B matrix spike and matrix spike duplicate did not meet the acceptance criteria. The laboratory control sample passed the acceptance criteria, therefore the results were due to matrix effect.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	ML001-SW-250312	Client:	Evren Northwest
Date Received:	03/13/25	Project:	1355-19001-03, F&BI 503190
Date Extracted:	03/17/25	Lab ID:	503190-01
Date Analyzed:	03/17/25	Data File:	031713.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	DBA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	74	31	129
Terphenyl-d14	82	48	155

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Benz(a)anthracene	<0.02
Chrysene	<0.02
Bis(2-ethylhexyl) phthalate	<4
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-03, F&BI 503190
Date Extracted:	03/17/25	Lab ID:	05-0695 mb
Date Analyzed:	03/17/25	Data File:	031706.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	DBA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	87	15	146
Terphenyl-d14	97	48	155

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Benz(a)anthracene	<0.02
Chrysene	<0.02
Bis(2-ethylhexyl) phthalate	<4
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client Sample ID:	ML001-SW-250312	Client:	Evren Northwest
Date Received:	03/13/25	Project:	1355-19001-03, F&BI 503190
Date Extracted:	03/13/25	Lab ID:	503190-01
Date Analyzed:	03/15/25	Data File:	503190-01.269
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Copper	<5
Zinc	37

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-03, F&BI 503190
Date Extracted:	03/13/25	Lab ID:	I5-224 mb
Date Analyzed:	03/14/25	Data File:	I5-224 mb.264
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Arsenic	<1
Copper	<5
Zinc	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/20/25

Date Received: 03/13/25

Project: 1355-19001-03, F&BI 503190

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	10	81	84	50-105	4
2-Methylnaphthalene	ug/L (ppb)	10	90	95	52-113	5
1-Methylnaphthalene	ug/L (ppb)	10	90	95	51-115	5
Benz(a)anthracene	ug/L (ppb)	10	101	105	66-131	4
Chrysene	ug/L (ppb)	10	93	98	66-129	5
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	10	120	126	52-142	5
Benzo(a)pyrene	ug/L (ppb)	10	104	108	66-129	4
Benzo(b)fluoranthene	ug/L (ppb)	10	108	111	55-144	3
Benzo(k)fluoranthene	ug/L (ppb)	10	107	112	58-139	5
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	10	86	92	62-136	7
Dibenz(a,h)anthracene	ug/L (ppb)	10	90	92	55-146	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/20/25

Date Received: 03/13/25

Project: 1355-19001-03, F&BI 503190

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 503184-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	8.95	80 b	73 b	70-130	9 b
Copper	ug/L (ppb)	20	<5	64 vo	62 vo	70-130	3
Zinc	ug/L (ppb)	50	<5	64 vo	63 vo	70-130	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	94	85-115
Copper	ug/L (ppb)	20	99	85-115
Zinc	ug/L (ppb)	50	97	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported between the method detection limit and the lowest calibration point. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

H3/L2

H3/L2

Email

Default: Dispose after 30 days

[illegible]

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 506190

CLIENT Erren

INITIALS/ AP

DATE: 8/13/25

If custody seals are present on cooler, are they intact?

☒ NA ☐ YES ☐ NO

Cooler/Sample temperature

2 °C

Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs?

☒ YES ☐ NO

How did samples arrive?

☐ Over the Counter

☐ Picked up by F&BI

☒ FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)?

☒ YES ☐ NO

*or other representative documents, letters, and/or shipping memos

Initials/ NP 3/13
Date:

Number of days samples have been sitting prior to receipt at laboratory 1 days

Are the samples clearly identified? (explain "no" answer below)

☒ YES ☐ NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below)

☒ YES ☐ NO

Were appropriate sample containers used?

☒ YES ☐ NO ☐ Unknown

If custody seals are present on samples, are they intact?

☒ NA ☐ YES ☐ NO

Are samples requiring no headspace, headspace free?

☒ NA ☐ YES ☐ NO

Is the following information provided on the COC, and does it match the sample label?
(explain "no" answer below)

Sample ID's ☒ Yes ☐ No ☐ Not on COC/label

Date Sampled* ☒ Yes ☐ No ☐ Not on COC/label

Time Sampled ☒ Yes ☐ No ☐ Not on COC/label

of Containers ☒ Yes ☐ No

Relinquished ☒ Yes ☐ No

Requested analysis ☒ Yes ☐ On Hold

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? ☒ NA ☐ YES ☐ NO

Number of unused TO15 canisters** Number of unused TO17 tubes

**Fill out Green manifolds billing sheet

2/4/25, 7:47 AM

GLS.

Ship From
EVREN NW
DAN SAJKO
18 SE 24TH ST
PORTLAND, OR 97214

Ship To
FRIEDMAN & BRUYA, INC
MICHAEL ERDAHL
5500 4TH AVE S
SEATTLE, WA 98108

COD: \$0.00
Weight: 0 lb(s)
Reference:

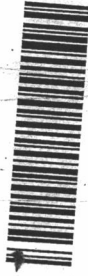
Delivery Instructions:

Signature Type: NOT REQUIRED

Output: blank

800-322-5555
www.gls-us.com

Tracking #: 562592262



PDS

SEATTLE

S06437C



25239391

KNT WA980-7C0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

April 29, 2025

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the additional results from the testing of material submitted on November 13, 2024 from the 1355-19001-03, F&BI 411197 project. There are 5 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Neil Woller, Paul Trone, Evan Bruggeman
ENW0429R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 13, 2024 by Friedman & Bruya, Inc. from the Evren Northwest 1355-19001-03, F&BI 411197 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
411197 -01	SW-241111

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	SW-241111	Client:	Evren Northwest
Date Received:	11/13/24	Project:	1355-19001-03, F&BI 411197
Date Extracted:	11/15/24	Lab ID:	411197-01
Date Analyzed:	11/16/24	Data File:	411197-01.263
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Chromium	<1
Copper	<5
Zinc	21

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-03, F&BI 411197
Date Extracted:	11/15/24	Lab ID:	I4-988 mb
Date Analyzed:	11/15/24	Data File:	I4-988 mb.063
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Chromium	<1
Copper	<5
Zinc	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/29/25

Date Received: 11/13/24

Project: 1355-19001-03, F&BI 411197

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 411132-05 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Chromium	ug/L (ppb)	10	1.71	88	93	70-130	6
Copper	ug/L (ppb)	10	31.9	85 b	105 b	70-130	21 b
Zinc	ug/L (ppb)	10	<5	92	94	70-130	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chromium	ug/L (ppb)	10	96	85-115
Copper	ug/L (ppb)	10	94	85-115
Zinc	ug/L (ppb)	10	96	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported between the method detection limit and the lowest calibration point. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

$$\frac{K_1}{K_2}$$

7

--	--

[illegible]

TIME

00.81

11:46

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 411197 CLIENT Evren INITIALS/ AP
DATE: 11/13/24

If custody seals are present on cooler, are they intact? ☒ NA ☐ YES ☐ NO

Cooler/Sample temperature 3 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? ☒ YES ☐ NO

How did samples arrive?
☐ Over the Counter ☐ Picked up by F&BI ☒ FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? ☒ YES ☐ NO Initials/ NP
*or other representative documents, letters, and/or shipping memos Date: 11/13

Number of days samples have been sitting prior to receipt at laboratory 2 days

Are the samples clearly identified? (explain "no" answer below) ☒ YES ☐ NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) ☒ YES ☐ NO

Were appropriate sample containers used? ☒ YES ☐ NO ☐ Unknown

If custody seals are present on samples, are they intact? ☒ NA ☐ YES ☐ NO

Are samples requiring no headspace, headspace free? ☒ NA ☐ YES ☐ NO

Is the following information provided on the COC, and does it match the sample label?
(explain "no" answer below)

Sample ID's	☒ Yes ☐ No	☐ Not on COC/label
Date Sampled	☒ Yes ☐ No	☐ Not on COC/label
Time Sampled	☒ Yes ☐ No	☐ Not on COC/label
# of Containers	☒ Yes ☐ No	
Relinquished	☒ Yes ☐ No	
Requested analysis	☒ Yes ☐ On Hold	

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? ☒ NA ☐ YES ☐ NO

Number of unused TO15 canisters _____ Number of unused TO17 tubes _____

GLS.

Ship From:

EVREN
DAN SAJKKO
40 SE 24TH AVE SUITE A
PORTLAND, OR 97214

Ship To:

FRIEDMAN & BRUYA, INC.
SAMPLE RECEIVING
5500 4TH AVENUE SOUTH
SEATTLE, WA, 98108

COD: \$0.00

Weight: 0 lb(s)

Dimensions:

Reference:

Delivery Instructions:

Signature Type: NOT REQUIRED

800-322-5555
www.gls-us.com

Tracking #: 562171551

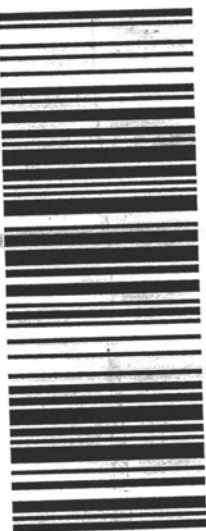


PDS

SEATTLE

S06437C

18396890



KNT WA980-7C0

Print Date : 10/24/24 15:40 PM

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Elizabeth Webber-Bruya
Ann Webber-Bruya
Michael Erdahl
Vineta Mills
Eric Young

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

April 29, 2025

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the additional results from the testing of material submitted on March 13, 2025 from the 1355-19001-03, F&BI 503190 project. There are 5 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Paul Trone, Evan Bruggeman
ENW0429R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 13, 2025 by Friedman & Bruya, Inc. from the Evren Northwest 1355-19001-03, F&BI 503190 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID
503190 -01

Evren Northwest
ML001-SW-250312

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client Sample ID:	ML001-SW-250312	Client:	Evren Northwest
Date Received:	03/13/25	Project:	1355-19001-03, F&BI 503190
Date Extracted:	03/13/25	Lab ID:	503190-01
Date Analyzed:	03/15/25	Data File:	503190-01.269
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Chromium	<5
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-03, F&BI 503190
Date Extracted:	03/13/25	Lab ID:	I5-224 mb
Date Analyzed:	03/14/25	Data File:	I5-224 mb.264
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Chromium	<5
----------	----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/29/25

Date Received: 03/13/25

Project: 1355-19001-03, F&BI 503190

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 503184-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Chromium	ug/L (ppb)	20	<5	81	78	70-130	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chromium	ug/L (ppb)	20	99	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported between the method detection limit and the lowest calibration point. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

H3/L2

H3/L2

Received by:

Friedman & Bruya, Inc.
5500 4th Ave S.
Seattle WA 98108
(206) 285-8282
office@friedmanandbruya.com

Friedman & Bruya, Inc.
5500 4th Ave S.
Seattle WA 98108
(206) 285-8282
office@friedmanandbruya.com

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 506190

CLIENT Erren

INITIALS/ AP

DATE: 8/13/25

If custody seals are present on cooler, are they intact?

☒ NA ☐ YES ☐ NO

Cooler/Sample temperature

2 °C

Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs?

☒ YES ☐ NO

How did samples arrive?

☐ Over the Counter

☐ Picked up by F&BI

☒ FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)?

☒ YES ☐ NO

*or other representative documents, letters, and/or shipping memos

Initials/ NP 3/13
Date:

Number of days samples have been sitting prior to receipt at laboratory 1 days

Are the samples clearly identified? (explain "no" answer below)

☒ YES ☐ NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below)

☒ YES ☐ NO

Were appropriate sample containers used?

☒ YES ☐ NO ☐ Unknown

If custody seals are present on samples, are they intact?

☒ NA ☐ YES ☐ NO

Are samples requiring no headspace, headspace free?

☒ NA ☐ YES ☐ NO

Is the following information provided on the COC, and does it match the sample label?
(explain "no" answer below)

Sample ID's ☒ Yes ☐ No ☐ Not on COC/label

Date Sampled* ☒ Yes ☐ No ☐ Not on COC/label

Time Sampled ☒ Yes ☐ No ☐ Not on COC/label

of Containers ☒ Yes ☐ No

Relinquished ☒ Yes ☐ No

Requested analysis ☒ Yes ☐ On Hold

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? ☒ NA ☐ YES ☐ NO

Number of unused TO15 canisters** Number of unused TO17 tubes

**Fill out Green manifolds billing sheet

2/4/25, 7:47 AM

GLS.

Ship From
EVREN NW
DAN SAJKO
18 SE 24TH ST
PORTLAND, OR 97214

Ship To
FRIEDMAN & BRUYA, INC
MICHAEL ERDAHL
5500 4TH AVE S
SEATTLE, WA 98108

COD: \$0.00
Weight: 0 lb(s)
Reference:

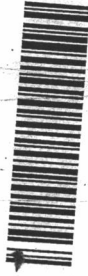
Delivery Instructions:

Signature Type: NOT REQUIRED

Output: blank

800-322-5555
www.gls-us.com

Tracking #: 562592262



PDS

SEATTLE

S06437C



25239391

KNT WA980-7C0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Elizabeth Webber-Bruya
Ann Webber-Bruya
Michael Erdahl
Vineta Mills
Eric Young

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

January 14, 2026

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the results from the testing of material submitted on January 7, 2026 from the 1355-19001-03, F&BI 601047 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Paul Trone, Evan Bruggeman
ENW0114R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on January 7, 2026 by Friedman & Bruya, Inc. from the Evren Northwest 1355-19001-03, F&BI 601047 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
601047 -01	ML001-260106

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	ML001-260106	Client:	Evren Northwest
Date Received:	01/07/26	Project:	1355-19001-03, F&BI 601047
Date Extracted:	01/07/26	Lab ID:	601047-01 1/0.5
Date Analyzed:	01/07/26	Data File:	010717.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	DBA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	95	31	129
2-Fluorobiphenyl	94	32	130
2,4,6-Tribromophenol	118	22	158
Terphenyl-d14	98	48	155

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.1
2-Methylnaphthalene	<0.05
1-Methylnaphthalene	<0.05
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.025
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	0.015
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01
Bis(2-ethylhexyl) phthalate	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-03, F&BI 601047
Date Extracted:	01/07/26	Lab ID:	05-0110 mb2 1/0.5
Date Analyzed:	01/07/26	Data File:	010709.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	DBA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	76	31	129
2-Fluorobiphenyl	73	32	130
2,4,6-Tribromophenol	78	22	158
Terphenyl-d14	88	48	155

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.1
2-Methylnaphthalene	<0.05
1-Methylnaphthalene	<0.05
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.025
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01
Bis(2-ethylhexyl) phthalate	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client Sample ID:	ML001-260106	Client:	Evren Northwest
Date Received:	01/07/26	Project:	1355-19001-03, F&BI 601047
Date Extracted:	01/08/26	Lab ID:	601047-01
Date Analyzed:	01/08/26	Data File:	601047-01.112
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.0
Chromium	1.7
Copper	<5
Zinc	24

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-03, F&BI 601047
Date Extracted:	01/08/26	Lab ID:	I6-17 mb2
Date Analyzed:	01/08/26	Data File:	I6-17 mb2.102
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Arsenic	<1
Chromium	<1
Copper	<5
Zinc	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/14/26

Date Received: 01/07/26

Project: 1355-19001-03, F&BI 601047

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	10	77	80	50-105	4
2-Methylnaphthalene	ug/L (ppb)	10	77	78	52-113	1
1-Methylnaphthalene	ug/L (ppb)	10	78	80	51-115	3
Acenaphthylene	ug/L (ppb)	10	88	90	60-114	2
Acenaphthene	ug/L (ppb)	10	83	85	57-110	2
Fluorene	ug/L (ppb)	10	85	86	61-115	1
Phenanthrene	ug/L (ppb)	10	85	89	69-115	5
Anthracene	ug/L (ppb)	10	90	92	65-121	2
Fluoranthene	ug/L (ppb)	10	94	96	71-127	2
Pyrene	ug/L (ppb)	10	83	87	62-133	5
Benz(a)anthracene	ug/L (ppb)	10	88	93	66-131	6
Chrysene	ug/L (ppb)	10	84	89	66-129	6
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	10	87	98	52-142	12
Benzo(a)pyrene	ug/L (ppb)	10	89	95	66-129	7
Benzo(b)fluoranthene	ug/L (ppb)	10	89	92	55-144	3
Benzo(k)fluoranthene	ug/L (ppb)	10	87	91	58-139	4
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	10	87	101	62-136	15
Dibenz(a,h)anthracene	ug/L (ppb)	10	90	102	55-146	12
Benzo(g,h,i)perylene	ug/L (ppb)	10	87	98	58-137	12

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/14/26

Date Received: 01/07/26

Project: 1355-19001-03, F&BI 601047

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 601022-03 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	40.6	93 b	102 b	70-130	9 b
Chromium	ug/L (ppb)	20	<10	98	92	70-130	6
Copper	ug/L (ppb)	20	<50	93	91	70-130	2
Zinc	ug/L (ppb)	50	<50	97	96	70-130	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	85	85-115
Chromium	ug/L (ppb)	20	89	85-115
Copper	ug/L (ppb)	20	87	85-115
Zinc	ug/L (ppb)	50	91	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported between the method detection limit and the lowest calibration point. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

151/031
of

Eryn Green

Europe Northwest

PuBox 14458

City, State, ZIP Portland OR 97243

Phone 503 452 5341 Email lyme@arrn-ny.com

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
 Rush charges authorized by: _____

SAMPLE DISPOSAL
☐ Archive samples
☐ Other _____
 Default: Dispose after 30 days

ANALYSES REQUESTED

[illegible]

Friedman & Bruya, Inc.
5500 4th Ave S.
Seattle WA 98108
(206) 285-8282
office@friedmanandbruya.com

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <i>AM Phan</i>	Allen Haller	ENM	1/10/26	1800
Received by: <i>mclaplan</i>	Phan Phan	FBT	1/2/26	1040
Relinquished by:				
Received by:				

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 601047 CLIENT Even INITIALS/ DATE: (NP) 01/07/26

If custody seals are present on cooler, are they intact? ☒ NA ☐ YES ☐ NO

Cooler/Sample temperature

2 °C

Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? ☒ YES ☐ NO

How did samples arrive?

☐ Over the Counter

☐ Picked up by F&BI

☒ FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? ☒ YES ☐ NO

*or other representative documents, letters, and/or shipping memos

Initials/ Date: (NP) 01/07

Number of days samples have been sitting prior to receipt at laboratory 1 days

Are the samples clearly identified? (explain "no" answer below) ☒ YES ☐ NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) ☒ YES ☐ NO

Were appropriate sample containers used? ☒ YES ☐ NO ☐ Unknown

If custody seals are present on samples, are they intact? ☒ NA ☐ YES ☐ NO

Are samples requiring no headspace, headspace free? ☒ NA ☐ YES ☐ NO

Is the following information provided on the COC, and does it match the sample label? (explain "no" answer below)

Sample ID's ☒ Yes ☐ No ☐ Not on COC/label

Date Sampled ☒ Yes ☐ No ☐ Not on COC/label

Time Sampled ☒ Yes ☐ No ☐ Not on COC/label

of Containers ☒ Yes ☐ No

Relinquished ☒ Yes ☐ No

Requested analysis ☒ Yes ☐ On Hold

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? ☒ NA ☐ YES ☐ NO

Number of unused TO15 canisters** _____ Number of unused TO17 tubes _____

**Fill out Green manifolds billing sheet

12/12/25, 7:55 AM

GLS.

Ship From
EVREN NW
DAN SAIKO
18 SE 24TH ST
PORTLAND, OR 97214

Ship To
FRIEDMAN & BRUYA, INC
MICHAEL ERDAHL
5500 4TH AVE S
SEATTLE, WA 98108

COD: \$0.00
Weight: 0 lb(s)
Reference:

Delivery Instructions:

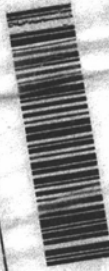
Signature Type: NOT REQUIRED

about:blank

800-322-5555
www.gls-us.com

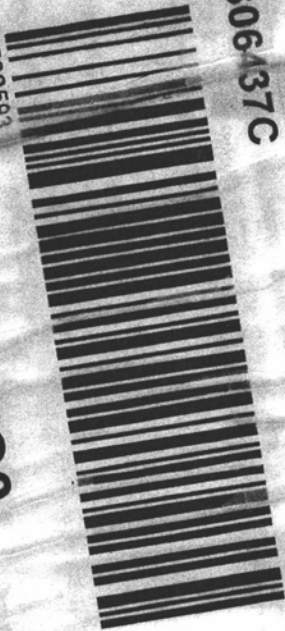
PDS

Tracking #: 563849081



SEATTLE

S06437C



47530593

KNT WA980-7C0

Print Date: 12/12/2005 7:55 AM

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Elizabeth Webber-Bruya
Ann Webber-Bruya
Michael Erdahl
Vineta Mills
Eric Young

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 23, 2026

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the results from the testing of material submitted on February 17, 2026 from the 1355-19001-02, F&BI 602289 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Paul Trone, Evan Bruggeman
ENW0223R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 17, 2026 by Friedman & Bruya, Inc. from the Evren Northwest 1355-19001-02, F&BI 602289 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

602289 -01

Evren Northwest

ML001-260213

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	ML001-260213	Client:	Evren Northwest
Date Received:	02/17/26	Project:	1355-19001-02, F&BI 602289
Date Extracted:	02/18/26	Lab ID:	602289-01 1/0.5
Date Analyzed:	02/18/26	Data File:	021820.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	80	31	129
2-Fluorobiphenyl	79	32	130
2,4,6-Tribromophenol	123	22	158
Terphenyl-d14	93	48	155

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.1
2-Methylnaphthalene	<0.05
1-Methylnaphthalene	<0.05
Acenaphthylene	<0.01
Acenaphthene	0.021
Fluorene	0.023
Phenanthrene	0.050
Anthracene	0.014
Fluoranthene	0.027
Pyrene	0.031
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	0.011
Bis(2-ethylhexyl) phthalate	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-02, F&BI 602289
Date Extracted:	02/18/26	Lab ID:	06-0370 mb3 1/0.5
Date Analyzed:	02/18/26	Data File:	021806.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	76	31	129
2-Fluorobiphenyl	65	32	130
2,4,6-Tribromophenol	95	22	158
Terphenyl-d14	84	48	155

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.1
2-Methylnaphthalene	<0.05
1-Methylnaphthalene	<0.05
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.025
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01
Bis(2-ethylhexyl) phthalate	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client Sample ID:	ML001-260213	Client:	Evren Northwest
Date Received:	02/17/26	Project:	1355-19001-02, F&BI 602289
Date Extracted:	02/18/26	Lab ID:	602289-01
Date Analyzed:	02/18/26	Data File:	602289-01.093
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Arsenic	2.7
Chromium	3.2
Copper	<5
Zinc	27

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1355-19001-02, F&BI 602289
Date Extracted:	02/18/26	Lab ID:	I6-161 mb2
Date Analyzed:	02/18/26	Data File:	I6-161 mb2.222
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Arsenic	<1
Chromium	<1
Copper	<5
Zinc	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/23/26

Date Received: 02/17/26

Project: 1355-19001-02, F&BI 602289

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	10	67	71	50-105	6
2-Methylnaphthalene	ug/L (ppb)	10	72	75	52-113	4
1-Methylnaphthalene	ug/L (ppb)	10	73	76	51-115	4
Acenaphthylene	ug/L (ppb)	10	90	87	60-114	3
Acenaphthene	ug/L (ppb)	10	84	81	57-110	4
Fluorene	ug/L (ppb)	10	89	89	61-115	0
Phenanthrene	ug/L (ppb)	10	84	91	69-115	8
Anthracene	ug/L (ppb)	10	85	91	65-121	7
Fluoranthene	ug/L (ppb)	10	90	100	71-127	11
Pyrene	ug/L (ppb)	10	79	87	62-133	10
Benz(a)anthracene	ug/L (ppb)	10	86	94	66-131	9
Chrysene	ug/L (ppb)	10	86	92	66-129	7
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	10	88	96	52-142	9
Benzo(a)pyrene	ug/L (ppb)	10	87	94	66-129	8
Benzo(b)fluoranthene	ug/L (ppb)	10	86	93	55-144	8
Benzo(k)fluoranthene	ug/L (ppb)	10	91	96	58-139	5
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	10	91	101	62-136	10
Dibenz(a,h)anthracene	ug/L (ppb)	10	101	110	55-146	9
Benzo(g,h,i)perylene	ug/L (ppb)	10	97	106	58-137	9

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/23/26

Date Received: 02/17/26

Project: 1355-19001-02, F&BI 602289

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 602256-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<1	99	101	70-130	2
Chromium	ug/L (ppb)	20	<1	98	93	70-130	5
Copper	ug/L (ppb)	20	<5	91	88	70-130	3
Zinc	ug/L (ppb)	50	<5	95	92	70-130	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	100	85-115
Chromium	ug/L (ppb)	20	103	85-115
Copper	ug/L (ppb)	20	99	85-115
Zinc	ug/L (ppb)	50	99	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported between the method detection limit and the lowest calibration point. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

02/17/26 K2/F3

PO #

INVOICE TO

Page # 1 of 1

TURNAROUND TIME

☒ Standard turnaround

☐ RUSH _____

Rush charges authorized by: _____

SAMPLE DISPOSAL

☐ Archive samples

☐ Other _____

Default: Dispose after 30 days

Default: Dispose after 30 days

ANALYSES REQUESTED

[illegible]

Friedman & Brya, Inc.
5500 4th Ave S.
Seattle WA 98108
(206) 285-8282
office@friedmanandbrya.com

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	Dan Salyer	ESU	2/16/26	1800
Received by: 	FBI		02/17/26	11:17
Relinquished by:				
Received by:				

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 602289 CLIENT Evern INITIALS/ AP
DATE: 02/17/26

If custody seals are present on cooler, are they intact? ☒ NA ☐ YES ☐ NO

Cooler/Sample temperature 3 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? ☒ YES ☐ NO

How did samples arrive?
☐ Over the Counter ☐ Picked up by F&BI ☒ FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? ☒ YES ☐ NO Initials/ AP
*or other representative documents, letters, and/or shipping memos Date: 02/17/26

Number of days samples have been sitting prior to receipt at laboratory 4 days

Are the samples clearly identified? (explain "no" answer below) ☒ YES ☐ NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) ☒ YES ☐ NO

Were appropriate sample containers used? ☒ YES ☐ NO ☐ Unknown

If custody seals are present on samples, are they intact? ☒ NA ☐ YES ☐ NO

Are samples requiring no headspace, headspace free? ☒ NA ☐ YES ☐ NO

Is the following information provided on the COC, and does it match the sample label?
(explain "no" answer below)

Sample ID's	☐ Yes ☐ No	☐ Not on COC/label
Date Sampled	☐ Yes ☐ No	☐ Not on COC/label
Time Sampled	☐ Yes ☐ No	☐ Not on COC/label
# of Containers	☐ Yes ☐ No	
Relinquished	☐ Yes ☐ No	
Requested analysis	☐ Yes ☐ On Hold	

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? ☒ NA ☐ YES ☐ NO

Number of unused TO15 canisters** Number of unused TO17 tubes

**Fill out Green manifolds billing sheet

1/20/26, 3:33 PM

about:blank

GLS.

800-322-5555
www.gls-us.com

Ship From

EVREN NW
DAN SAJKO
18 SE 24TH S
PORTLAND, OR 97214

Tracking #: 563986989

PDS



Ship To

FRIEDMAN & BRUYA, INC
MICHAEL ERDAHL
5500 4TH AVE S
SEATTLE, WA 98108

SEATTLE

S06437C

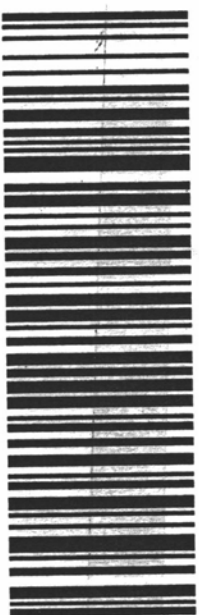
COD: \$0.00

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Reference:

Delivery Instructions:

Signature Type: NOT REQUIRED



50487926

KNT WA980-7C0

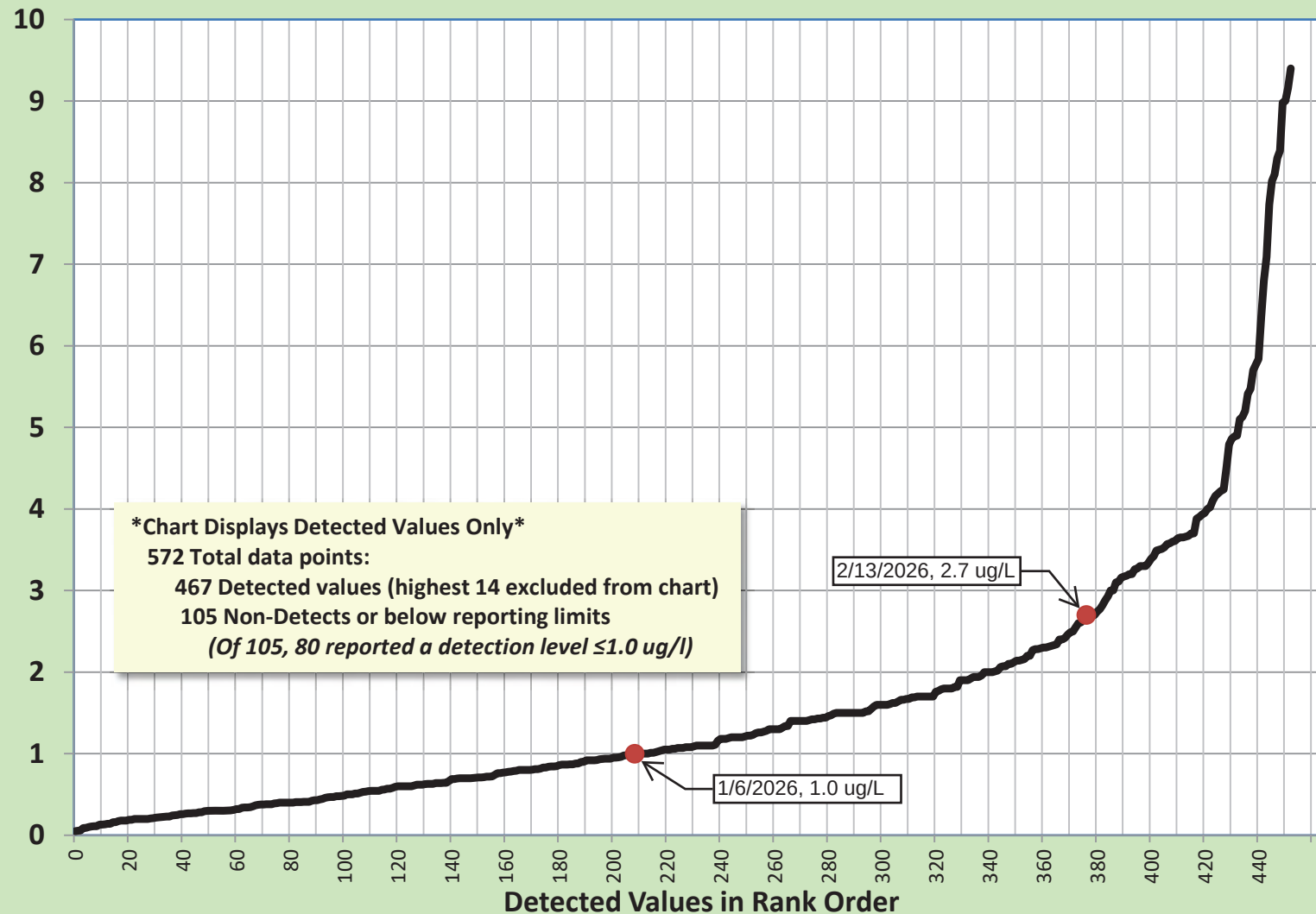
Print Date: 1/20/2026 3:33 PM

Package 12 of 25

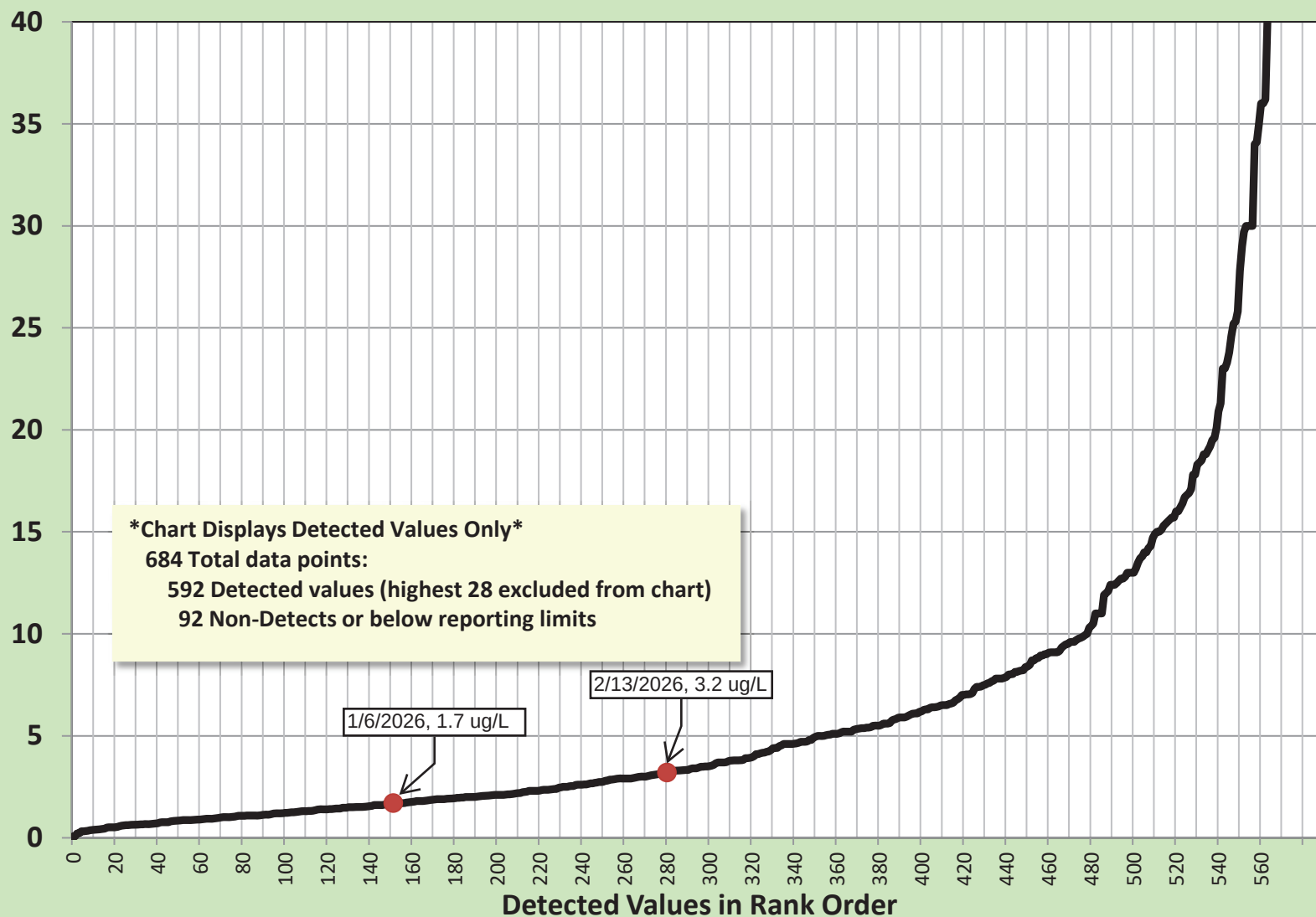
Appendix G

Comparison of Storm-water Analytical Results to Typical Industrial Sites

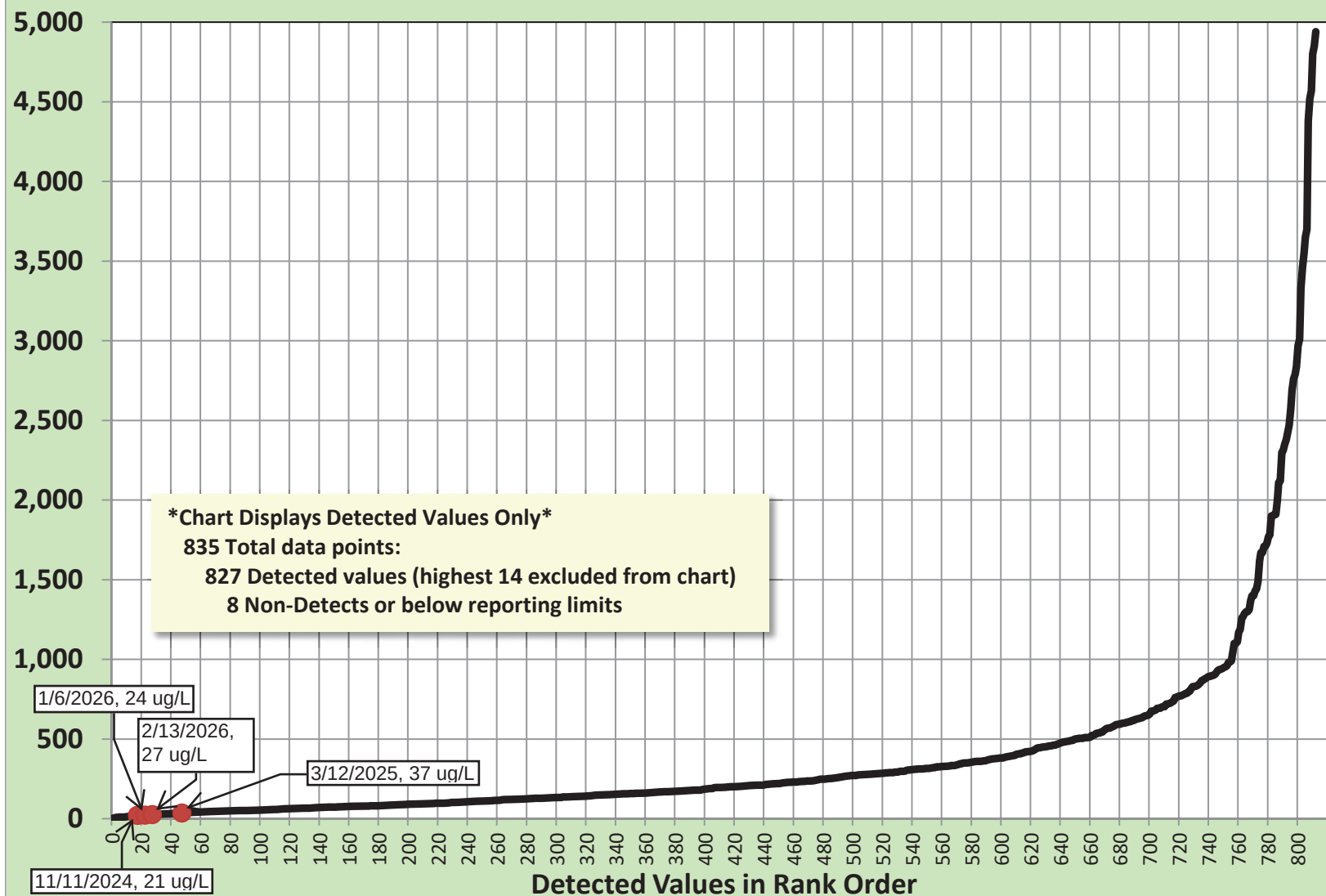
Arsenic (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites



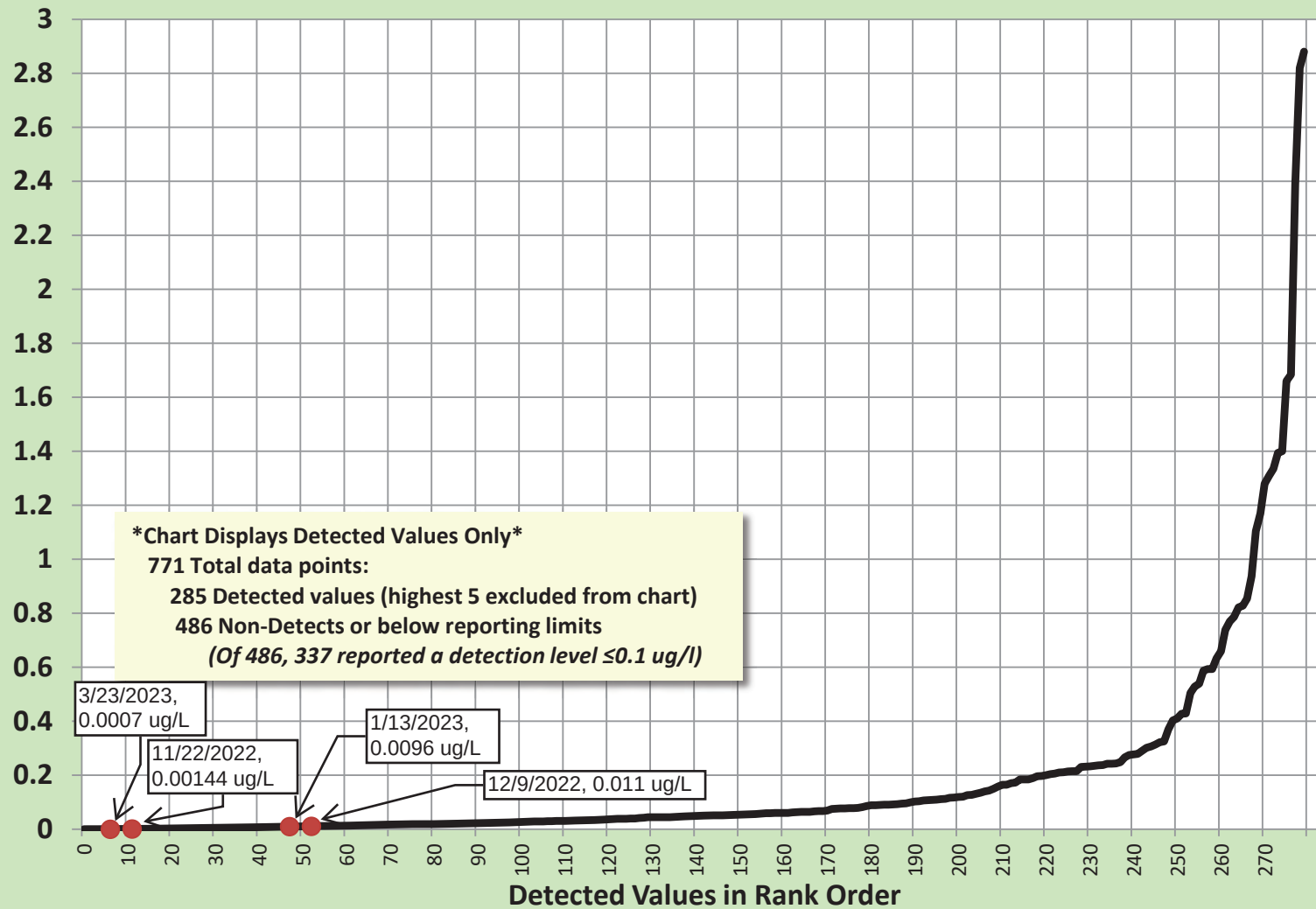
Chromium (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites



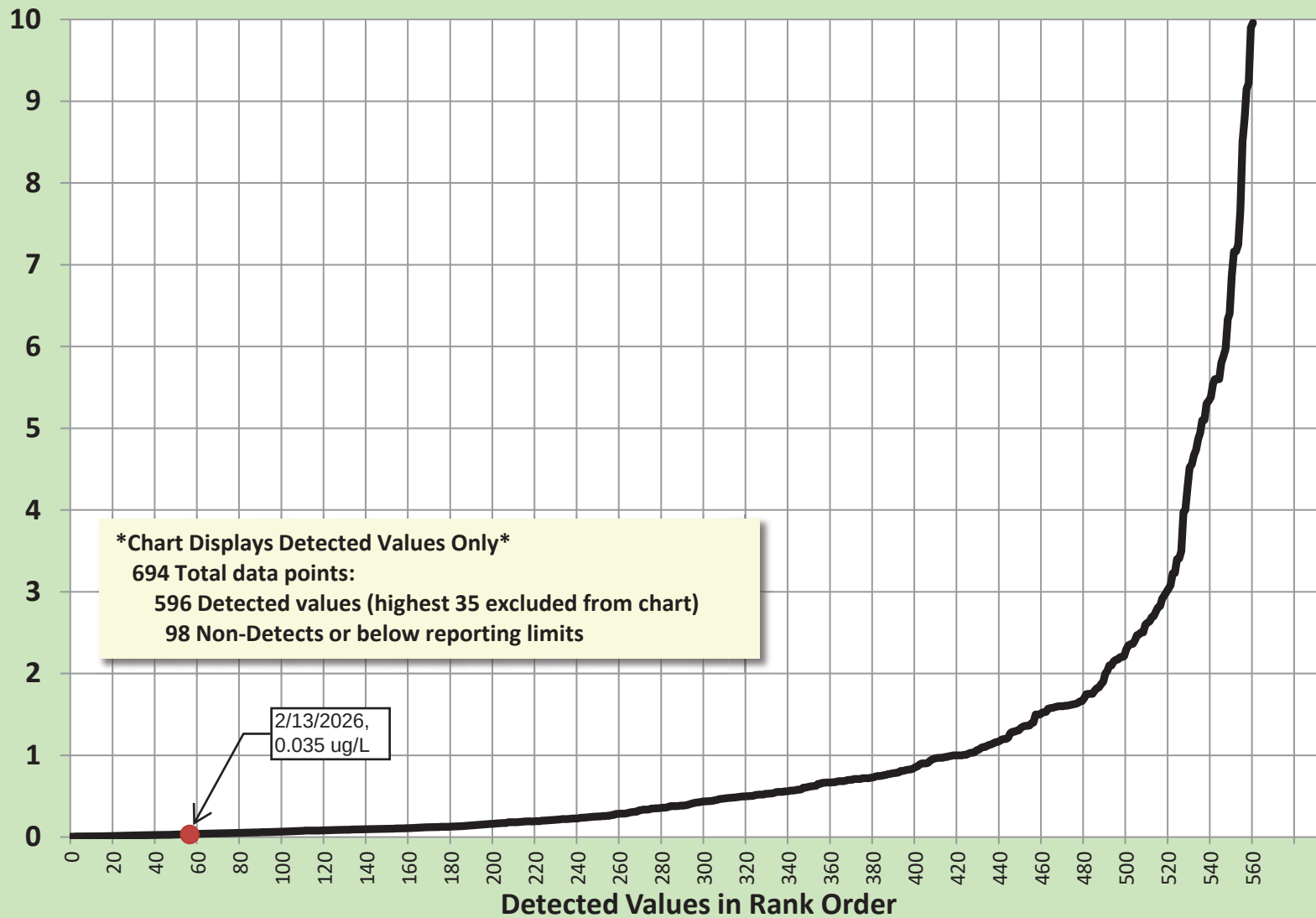
Zinc (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites



Total PCBs (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites



Total PAHs (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites



2,3,7,8-TCDD (pg/L) in Stormwater at Portland Harbor Heavy Industrial Sites

