# SITE CLOSURE REPORT

## 13.4-ACRE UNDEVELOPED PARCEL, 16720 WALLER ROAD EAST, TACOMA, WASHINGTON

Prepared for
Pierce County Planning & Public Works

Prepared by
Herrera Environmental Consultants, Inc.

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**Note:**
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# 13.4-ACRE UNDEVELOPED PARCEL, 16720 WALLER ROAD EAST, TACOMA, WASHINGTON

Prepared for
Pierce County Planning & Public Works
2702 South 42nd Street, Suite 109
Tacoma, Washington 98409

Prepared by
Herrera Environmental Consultants, Inc.
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
Telephone: 206-441-9080

November 25, 2019

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# CERTIFICATE OF LICENSED GEOLOGIST AND LICENSED HYDROGEOLOGIST

This document has been prepared under the supervision of a licensed geologist and a licensed hydrogeologist.

George C. Iftner — November 22, 2019

Name — Date

Bruce A. Carpenter — November 22, 2019

Name — Date

# ABBREVIATIONS

| | |
|---|---|
| amsl | above mean sea level |
| bgs | below ground surface |
| BTEX | benzene, toluene, ethylbenzene, and total xylenes |
| COCs | Chemicals of Concern |
| COPCs | contaminants of potential concern |
| cPAHs | carcinogenic polycyclic aromatic hydrocarbons |
| CUL | cleanup level |
| Ecology | Washington Department of Ecology |
| EPA | US Environmental Protection Agency |
| ESA | Environmental Site Assessment |
| ETBE | tert-Butyl Ethyl Ether |
| GIS | Geographic Information System |
| GPS | Global Positioning System |
| HCID | Hydrocarbon Identification |
| Herrera | Herrera Environmental Consultants, Inc. |
| HVOCs | Halogenated Volatile Organic Compounds |
| LRI | Land Recovery, Inc. |
| mg/kg | milligrams per kilogram |
| mg/L | milligrams per Liter |
| MTBE | methyl tert-Butyl Ether |
| MTCA | Model Toxics Control Act |

| | |
|---|---|
| MW | monitoring well |
| NA | Not applicable |
| NAVD | North American Vertical Datum |
| ND | Not detected |
| NFA | No Further Action |
| NWTPH-Dx | Northwest Total Petroleum Hydrocarbons – Diesel Extended |
| NWTPH-Gx | Northwest Total Petroleum Hydrocarbons – Gasoline Extended |
| PAHs | polycyclic aromatic hydrocarbons |
| PCBs | polychlorinated biphenyls |
| RCW | Revised Code of Washington |
| SIM | secondary-ion mass |
| SSL | site screening level |
| TAME | tert-Amyl Methyl Ether |
| TBA | tert-Butyl Alcohol |
| TCLP | Toxicity Characteristic Leaching Procedure |
| TEE | Terrestrial Ecological Evaluation |
| TP | test pit |
| TPCHD | Tacoma-Pierce County Health District |
| µg/L | micrograms per liter |
| USGS | US Geological Survey |
| VCP | Voluntary Cleanup Program |
| VOC | volatile organic compound |
| WAC | Washington Administrative Code |

# EXECUTIVE SUMMARY

This Site Closure Report has been prepared for a 13.4-acre undeveloped parcel of land located at 16720 Waller Road East, parcel number 0319262074, in unincorporated Pierce County, Washington. The 13.4-acre parcel, hereafter referred to as the *Site*, is located at the north end of a property owned by Pierce County and is being sold to the Bethel School District to be developed as an elementary school.

This Site Closure Report has been prepared to meet the requirements of the Model Toxics Control Act and regulations implementing it, Washington Administrative Code 173-340, and to provide the results of site characterization and site remediation work completed at the Site.

## SITE CHARACTERIZATION

### Test Pit Investigations

In May 2019, a total of nine test pits (TP-1 through TP-9) were initially completed at the Site during a Limited Phase II Environmental Site Assessment completed for the School District (S&W 2019). At one test pit (TP-9) petroleum contaminated soils and miscellaneous debris were encountered in fill soils to a depth of 8 feet below ground surface. Elevated concentrations of lube oil, heavy metals, and carcinogenic polycyclic aromatic hydrocarbons were detected above the Model Toxics Control Act Method A cleanup levels in shallow and deep soil samples. In addition, the concentration of lead detected at 2.5 feet below ground surface exceeded the Dangerous Waste limit of 5 milligrams/Liter for Toxicity Characteristic Leaching Procedure lead.

Abandoned automobile remnants were also observed during the Limited Phase II Environmental Site Assessment near TP-4. Those remnants were removed on July 23, 2019, and no Contaminants of Potential Concern were detected in soils at that location above the ecological Site Screening Levels or Model Toxics Control Act Method A or B Cleanup Levels.

In June 2019, an additional 11 test pit explorations were completed by Herrera Environmental Consultants, Inc., including 9 test pits along the north and west soil berms, a 10th "clean" test pit behind the north soil berm, and an 11th at the location of the abandoned automobile remnants. At TP-A through TP-D, miscellaneous household debris including plastic, metal, ceramic, concrete, rope, and similar items were observed in four test pits completed along the west berm. However, no petroleum-stained soils, odors, or other signs of contamination were observed; and concentrations of Chemicals of Concern detected were below the Site's Site Screening Levels and Cleanup Levels.

At TP-E, miscellaneous household debris was observed, and at TP-F through TP-I, metal debris, rubber hose, and other items were observed along with petroleum staining resembling waste oil

and strong petroleum odors. Laboratory analysis of samples from TP-E and TP-F confirmed elevated concentrations of lube oil, lead, and carcinogenic polycyclic aromatic hydrocarbons above the Site's Site Screening Levels and Cleanup Levels.

## Ditch Soil Sampling

In June and July 2019, surface soil samples were collected from a total of six locations in ditches behind soil berms; an elevated concentration of lube oil was detected at the Ditch 5 sample location directly behind TP-E. No elevated concentrations of Chemicals of Concern above the Site's Site Screening Levels or Cleanup Levels were detected at any of the other five ditch sample locations.

## Groundwater Sampling

In August and November 2019, two quarterly groundwater sampling events were completed at the Site. During the August 5, 2019, sampling event, only three total metals (chromium, lead, and zinc) were detected above the laboratory reporting limits in a sample from one well (MW-1); however, the metals concentrations were all below the respective Model Toxics Control Act Method A or B cleanup levels. No petroleum hydrocarbons, fuel additives, or carcinogenic polycyclic aromatic hydrocarbons were detected in samples from any of the wells. During the November 1, 2019, sampling event, none of the parameters analyzed were detected above the laboratory reporting limits in any of the three wells.

# Remedial Activities

In July and August 2019, a total of four remedial excavations, Excavation E through Excavation H were completed at the Site; Excavation H included the former TP-9 source area that was investigated by Shannon & Wilson. At each excavation, soils were visually screened and loaded directly into a truck and trailer or stockpiled on plastic sheeting, and initial soil confirmation samples were collected. Where Chemicals of Concern were detected in soil samples above the Site's Site Screening Levels or Cleanup Levels, additional soils were removed, and the area(s) resampled until no Chemicals of Concern were detected above the Site's Site Screening Levels or Cleanup Levels in any of the final confirmation samples from all four excavations.

A total of 242.49 tons of soils designated as Dangerous Waste were disposed at Chemical Waste Management in Arlington, Oregon, and 759.28 tons of soils designated as PCS were disposed at LRI in Puyallup, Washington.

The Site has been successfully remediated in compliance with Washington Administrative Code Chapter 173-340. The remedial action removed all contamination to levels below the ecological screening levels and/or Model Toxics Control Act Method A or B cleanup levels for unrestricted land use. One additional round of quarterly groundwater sampling is planned in February 2020 to further assess groundwater conditions at the Site. Pending the results of that sampling event and based on the site characterization activities and remedial actions completed and described in this Site Closure Report, an unrestricted No Further Action finding is warranted for this Site.

# 1. INTRODUCTION

The purpose of this Site Closure Report is to describe site remediation activities, including contaminated soil removal and soil and groundwater sampling on 13.4 acres of vacant undeveloped land owned by Pierce County now known as Pierce County Parcel No. 0319262074, formerly the northern portion of the property known as the Prairie Pit Maintenance Facility. The northerly 13.4 acres was not used or developed as part of the County's maintenance facility and is referred to herein as the *Site* (Figures 1 and 2). The Site is located at 16720 Waller Road East, Tacoma, in unincorporated Pierce County, Washington.

Pierce County is selling the Site to the Bethel School District (School District) to be developed as an elementary school. The southern portion of the property (Pierce County Parcel No. 0319263091) is not being sold and will continue to be used as a County maintenance facility.

Pierce County entered the Voluntary Cleanup Program (VCP) in July 2019 when the County's property was constituted as one parcel of land. However, the vacant undeveloped portion (13.4 acres) has since been segregated from the maintenance facility portion (21.5 acres); the County is requesting an opinion from the Washington State Department of Ecology (Ecology) on the remediation activities completed to date to achieve "No Further Action" (NFA) status for the 13.4-acre Site only.

Two quarters of groundwater sampling were completed in August and November 2019, and the results of additional groundwater sampling planned in February 2020 will be presented to Ecology in a technical memorandum separate from this Site Closure Report.

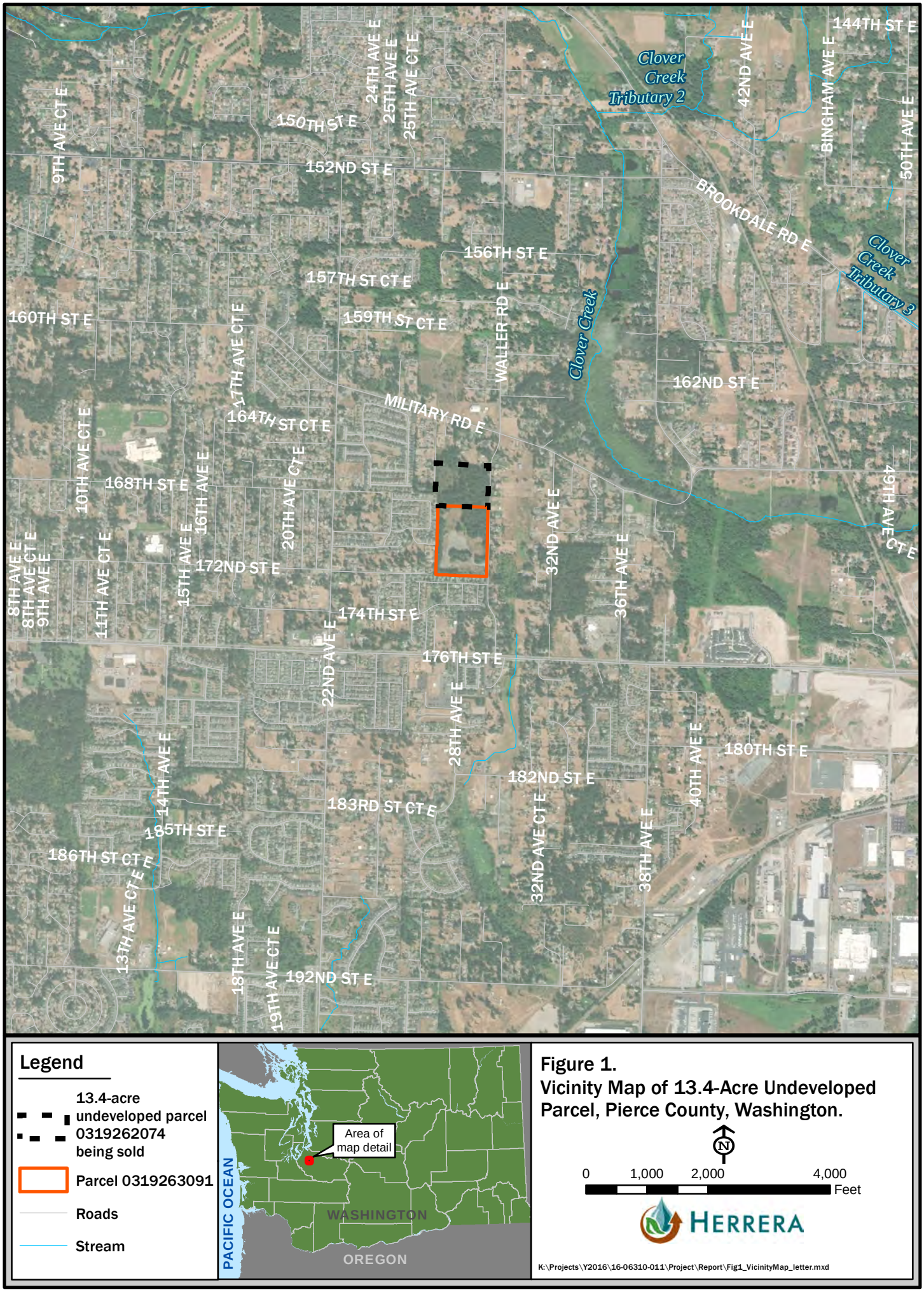


**Figure 1.**
**Vicinity Map of 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

## Legend

- Private water supply well
- Monitoring well (Herrera 2019)
- Test pit (Shannon & Wilson 2019)
- Parcel 0319262074 being sold
- Parcel 0319263091
- Soil berm
- Ditch
- Access road

Notes: The plotted locations of private water supply wells are not consistent with the listed addresses (see the Hydrology section of the Site Closure Report for more information).

**Figure 2. Site Map of 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

N

0 175 350 700 Feet

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Digital Globe, Aerial (2017)

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## 1.1. General Site Information

| | |
|---|---|
| Site Name | 13.4-Acre Undeveloped Parcel |
| Site Address | 16720 Waller Road East, Tacoma, Pierce County, WA 98446-1336 |
| Facility Site Identification number (FSID) | 40178 |
| Cleanup Site ID | 15007 |
| VCP Project Number | SW1684 |

Herrera Environmental Consultants, Inc. (Herrera) has prepared this Site Closure Report for the Site located in Pierce County, Washington.

The project consultant lead is George Iftner, LG, of Herrera Environmental Consultants, Inc. (Herrera) located at 2200 Sixth Avenue, Suite 1100, Seattle, Washington 98121; telephone: 206-787-8210; email: giftner@herrerainc.com. Mr. Iftner is supported by senior reviewer and licensed hydrogeologist Bruce Carpenter, LHG, of Herrera; telephone: 206-787-8217; email: bcarpenter@herrerainc.com.

The property is currently unoccupied but owned by Pierce County. Kerri Wittman, Lands Asset Management Supervisor for Pierce County Planning & Public Works, is the Site contact. She is located at 2702 South 42nd Street, Suite 109, Tacoma, Washington 98409; telephone: 253-798-7020; email: kerri.wittman@piercecountywa.gov.

## 1.2. Report Organization

This Site Closure Report has been organized in accordance with Ecology's Remedial Investigation Checklist (Publication No. 16-09-006) dated May 16, and includes the following:

- Section 2 describes the Site history, use, and setting.
- Section 3 describes field investigations including previous environmental investigations, and site characterization and remedial activities.
- Section 4 presents the Conceptual Site Model (CSM) for the Site, including the sources, nature, and extent of concentrations of hazardous substances detected in soil and an assessment of potential receptors and exposure pathways.
- Section 5 presents the cleanup standards selected for the Site and discussion of the Terrestrial Ecological Evaluation completed.
- Section 6 presents the summary, conclusions, and recommendations.
- Section 7 provides the references cited in the report.

# 2. SITE DESCRIPTION AND BACKGROUND

The property owned by the County along Waller Road East includes the 13.4-acre vacant, undeveloped Site on the north end, and 21.5 acres of land on the south end used by the County as a maintenance facility. The 34.9-acre property is situated in Section 26, Township 19 North, Range 3 East of the Willamette Meridian. Both parcels are located approximately 700 feet south of Military Road East, and directly adjacent to and west of Waller Road East, in unincorporated Pierce County, Washington. According to Pierce County's Public Geographic Information System (GIS) website, the property is currently zoned Moderate Density Single Family (Pierce County 2019).

The County property, including the Site being sold to the School District, is surrounded by a locked fence. Access to the Site is provided from Waller Road East and is restricted to Pierce County employees.

## 2.1. SITE HISTORY

The property was purchased by the County in the 1952 and the southern portion began operating as a gravel pit around 1961. In 1971 the County obtained a permit to operate as a gravel mine, and mining continued for a few decades on the southern portion of the property. In addition to mining activities, the southern portion of the property was used by the County as a storage area for equipment and materials needed for road maintenance activities and materials generated as byproducts of road maintenance activities, but no equipment or materials are currently stored there (Pierce County 2014).

From 2006 through 2011, street maintenance wastes (i.e., street sweepings) were temporarily stored and tested at the southern portion of the property for petroleum hydrocarbons, PAHs, and metals to determine disposal options. All testing was done in accordance with the solid waste handling permit (27-731) procedures established by the Tacoma Pierce County Health Department (TPCHD). Waste that tested below Model Toxics Control Act (MTCA) cleanup levels was spread in 4- to 6-inch lifts on the southern portion of the property as a daily cover. Waste that tested above MTCA levels was hauled off site to a licensed disposal facility (TPCHD 2018; J. Rudolph, personal communication, June 25, 2019).

In the 1990s, the County erected a security fence around the perimeter of the entire property. The Site (i.e., the northern portion of the property) has not been developed and no mining activities are reported to have occurred there (Pierce County 2014). This is supported by dense stands of trees observed on the Site in aerial photographs reviewed in Google Earth (Google 2019).

## 2.2. SITE USE

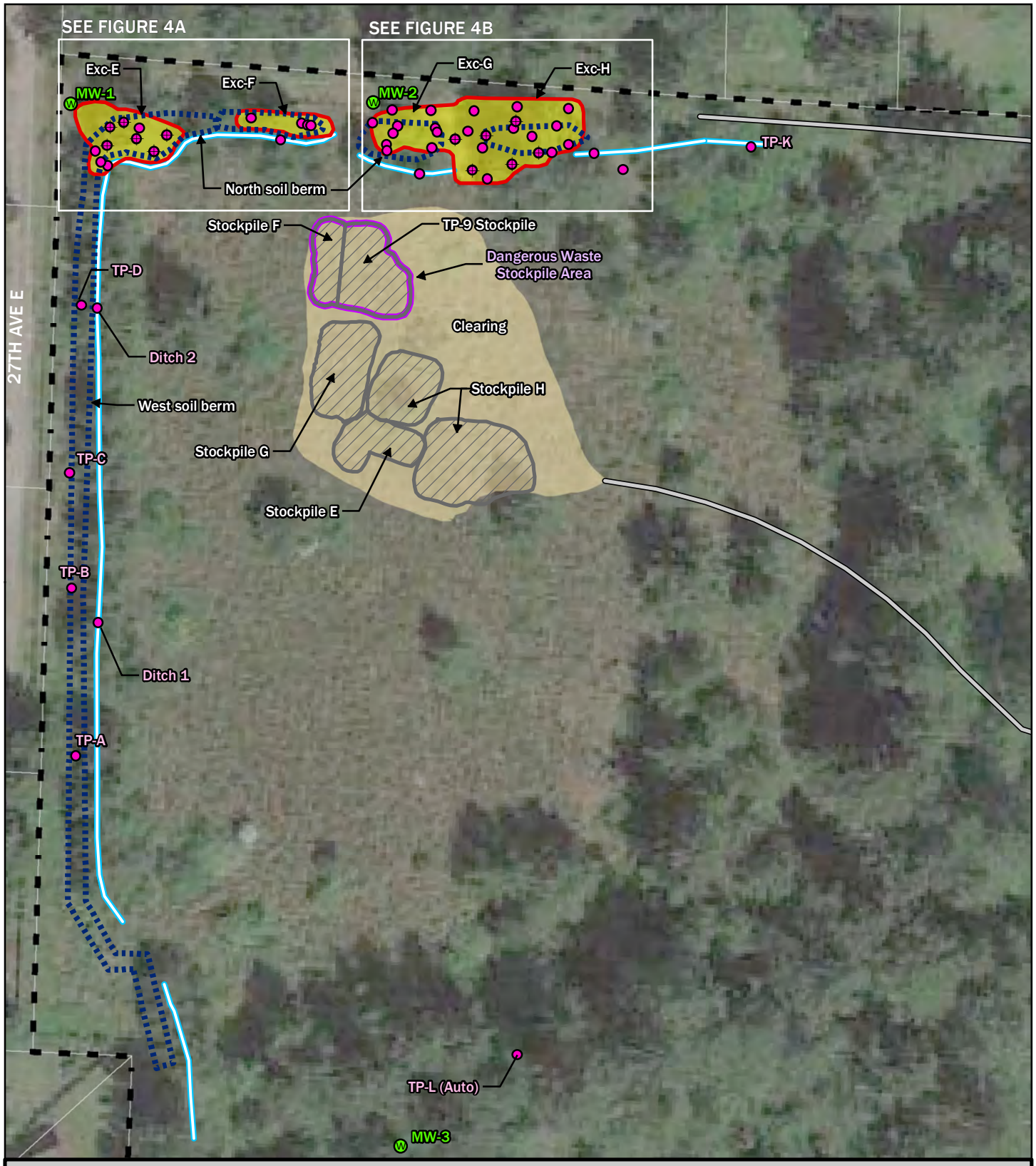
The Site is currently undeveloped and is being purchased by the Bethel School District to build an elementary school. Soil berms located along the north and west sides of the Site indicate that some fill material was historically placed at those locations (Figure 3).

## 2.3. SITE SETTING

The Site rests on a broad glacial recessional outwash plain, formed by melt water streams as the continental glaciers ablated, about 13,000 years ago. The center of the Site is situated at latitude 47°06'18" north and longitude 122°23'30" west.

The Site slopes gently from west to east with surveyed ground elevations ranging from 380 feet above mean sea level (amsl) at the northwest corner, to 386 feet at the southwest corner to 373 feet along the east property line (Sitts & Hill 2019; Appendix A).

There are two types of groundcover at the Site: forest and prairie. The prairie and forested portions of the Site are vegetated with second-growth Douglas-fir (*Pseudotsuga menziesii*), tall Oregon grape (*Mahonia aquifolium*), Ocean-spray (*Holodiscus discolor*), Scotch broom (*Cytisus scoparius*), Blackberry (*Rubus armeniacus*), and Hazelnut (*Corylus cornuta*).




## Legend

- Monitoring well
- Discrete grab soil sample
- Composite soil sample
- Parcel 0319262074 being sold
- Excavation final boundary
- Parcel boundary
- Soil berm
- Clearing area
- Stockpile area
- Ditch
- Access road

**Figure 3. Test Pits, Excavations, Stockpiles, and Monitoring Well Locations at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

0 35 70 140 Feet

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Google Earth, Aerial (2018)

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# 3. FIELD INVESTIGATIONS

## 3.1. PREVIOUS ENVIRONMENTAL INVESTIGATIONS

### 3.1.1. Limited Phase II Environmental Site Assessment

In May 2019, Shannon & Wilson conducted a limited Phase II Environmental Site Assessment (ESA) as part of due diligence investigations of the site associated with the School District's acquisition of the Site (S&W 2019). A total of nine test pits (TP-1 through TP-9) were completed throughout the site (Figure 2); eight of the test pits were placed randomly throughout the Site and the ninth was placed at the location of metal debris observed at the ground surface near the northern property boundary. Soil samples were collected from each test pit for laboratory analysis and the field activities were documented with test pit logs and photographs.

Soils encountered at TP-1 through TP-8 generally included 1.5 to 2.5 feet of brown to black silty sand with organics overlying weathered, medium dense glacial outwash comprised of gravel with silts, sands, cobbles and boulders. Soils at Test Pit 9 included up to 7 feet of brown to black silty sand overlying glacial outwash. A variety of debris including tires, electrical wire, rusted metal drum remnants, rubber, foam, concrete, bricks, and treated wood were observed in the test pit. In addition, remnants of an abandoned automobile (e.g., seat springs and covering and other miscellaneous metal) were observed to the northwest of TP-4.

Ten soil samples, including one from each test pit and two from TP-9 at depths of 2.5 feet and 8 feet below ground surface (bgs), were submitted for laboratory analysis. The following conclusions were presented in the report based on the observations and laboratory analysis performed on the samples:

- Contaminated soils were not identified at TP-1 through TP-8.
- Concentrations of heavy metals detected in test pits other than TP-9 were within natural background ranges (Ecology 1994).
- Lube-oil range petroleum hydrocarbons, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and heavy metals (cadmium and lead) were detected above the respective Model Toxics Cleanup Act (MTCA) (Ecology 2013) Method A cleanup levels (CULs) for unrestricted land use.

- Lead was detected in the soil sample from 2.5 feet at TP-9 at a concentration of 6.01 milligram per Liter (mg/L) which exceeded the Toxicity Characteristic Leaching Procedure (TCLP) limit of 5 mg/L, indicating that the soils is classified as a Dangerous Waste.

- S&W recommended that contaminated soils at TP-9 and abandoned automobile debris near TP-4 be removed and confirmation samples be collected from both locations.

- S&W recommended that a Soil Management Plan be prepared and used as needed during construction of the future school to address unanticipated contaminated soils if encountered.

## 3.2. SITE CHARACTERIZATION AND REMEDIAL ACTIVITIES

Herrera reviewed the limited Phase II ESA (S&W 2019), conducted an initial site visit with County staff on June 17, 2019, and participated in a conference call with County staff and Tim Mullins, Ecology VCP Project Manager on July 19, 2019, and identified the following data gaps:

- Lack of test pit and soil sampling data to characterize soils in the north and west berms, located along the north and west sides of the Site (Figure 3)

- Lack of soil sampling data to characterize the drainage ditches located behind the berms

- Lack of groundwater sampling data to characterize groundwater conditions and flow direction at the Site

- Lack of soil data to confirm whether a release may have occurred at the location of the abandoned automobile remnants

Based on these data gaps, the scope of the Site characterization and remediation activities was expanded to include additional soil explorations and sampling at several berm test pits, at ditch locations behind the berms, at the abandoned automobile remnants area, as well as installation of three new monitoring wells and quarterly groundwater sampling.

A discussion of the Contaminants of Potential Concern (COPCs) identified at the Site, Potential Exposure Pathways, and Site Screening Levels (SSLs) selected is presented in the following section, along with a description of the site characterization and remedial activities completed. Photographic documentation is provided in Appendix C.

### 3.2.1. Contaminants of Potential Concern

The COPCs identified for the Site are those chemicals that were reported above the laboratory reporting limits in media sampled at the Site (e.g., soils) during the limited Phase II ESA (S&W 2019). The COPCs include:

- Lube oil
- PAHs
- Metals (specifically cadmium and lead).

The concentrations of COPCs detected during Site remedial activities were compared to the SSLs described below.

#### *3.2.1.1. Potential Exposure Pathways*

The following potential exposure pathways were evaluated for the Site:

- **Soil contaminants leaching to groundwater:** Contaminants in soil can leach to groundwater by infiltration of precipitation through contaminated soil.
- **Ingestion of groundwater:** Human receptors have the potential to contact contaminants in groundwater via ingestion.
- **Direct contact with soil:** Human and ecological receptors have the potential to contact contaminants in soil.

Exposure pathways determined not applicable at the Site include:

- **Soil vapor discharge to ambient and indoor air:** Based on the test pit explorations completed, it does not appear that refuse has been placed at the Site that could be a source of soil vapors. No VOCs have been detected above SSLs in soil samples collected at the Site.

#### *3.2.1.2. Site Screening Levels*

The SSLs selected for soil include:

- Standard MTCA Method A and B CULs were selected because they are protective of human health and drinking water. Chapter 173-340 Washington Administrative Code (WAC).
- Soil CULs for unrestricted land use listed in Table 749-2: Priority Contaminants of Ecological Concern for Sites that Qualify for the Simplified Terrestrial Ecological Evaluation (TEE) Procedure. Chapter 173-340 WAC.

The SSLs selected for groundwater include:

- Standard MTCA Method A and B CULs for the protection of human health, Chapter 173-340 WAC.

## 3.2.2. Soil Berm Test Pit Explorations and Ditch Sampling

A total of 12 test pits were completed by Langseth Environmental Services, Inc. (Langseth), of Tacoma, Washington. The test pits were necessary to further characterize conditions along the north and west soil berms and supplement data previously collected during the limited Phase II ESA (S&W 2019). In addition, surface soil samples were collected at six ditch locations to characterize conditions in topographic low spots immediately behind the soil berms (see Figures 3, 4A, and 4B). A summary of conditions observed at test pits and ditch sample locations is provided in Table 1. The locations of test pits and ditch samples were recorded in the field using a handheld global positioning system (GPS) unit and the coordinates were downloaded and translated onto figures generated for this report.

On June 27, 2019, the first 11 test pits (TP-A through TP-K) were completed and soil samples collected. A 12th test pit (TP-L) was completed, and a soil sample collected on July 23 at the location of the abandoned automobile remnants. TP-J was completed approximately 40 feet southeast of TP-I (Figure 4B) for the purpose of confirming clean soil conditions behind the north berm.

### *3.2.2.1. Sample Identification*

Test pit and ditch samples were identified using the following system:

- Prefix *TP* for test pit or *Ditch* for ditch
- Designator A through L for test pit locations and 1 through 6 for ditch sample locations
- Suffix indicating the top of the sample interval

For example, TP-F-2.5 represents the sample collected at Test Pit F from 2.5 to 3.5 feet bgs, and Ditch-4-0 represents the sample collected at Ditch 4 from 0 to 1 foot bgs. For sample Ditch-5B-1, the "B" was added after the designator to indicate the second sample collected at that location after additional soil was excavated (e.g., Ditch-5B-1 was collected at the location of Ditch-5-0).

### *3.2.2.2. Sampling and Laboratory Analysis*

Ditch samples were collected from locations Ditch-1 through Ditch-4 on June 27, 2019, and from locations Ditch-5 and Ditch-6 on July 23 and 26, 2019.

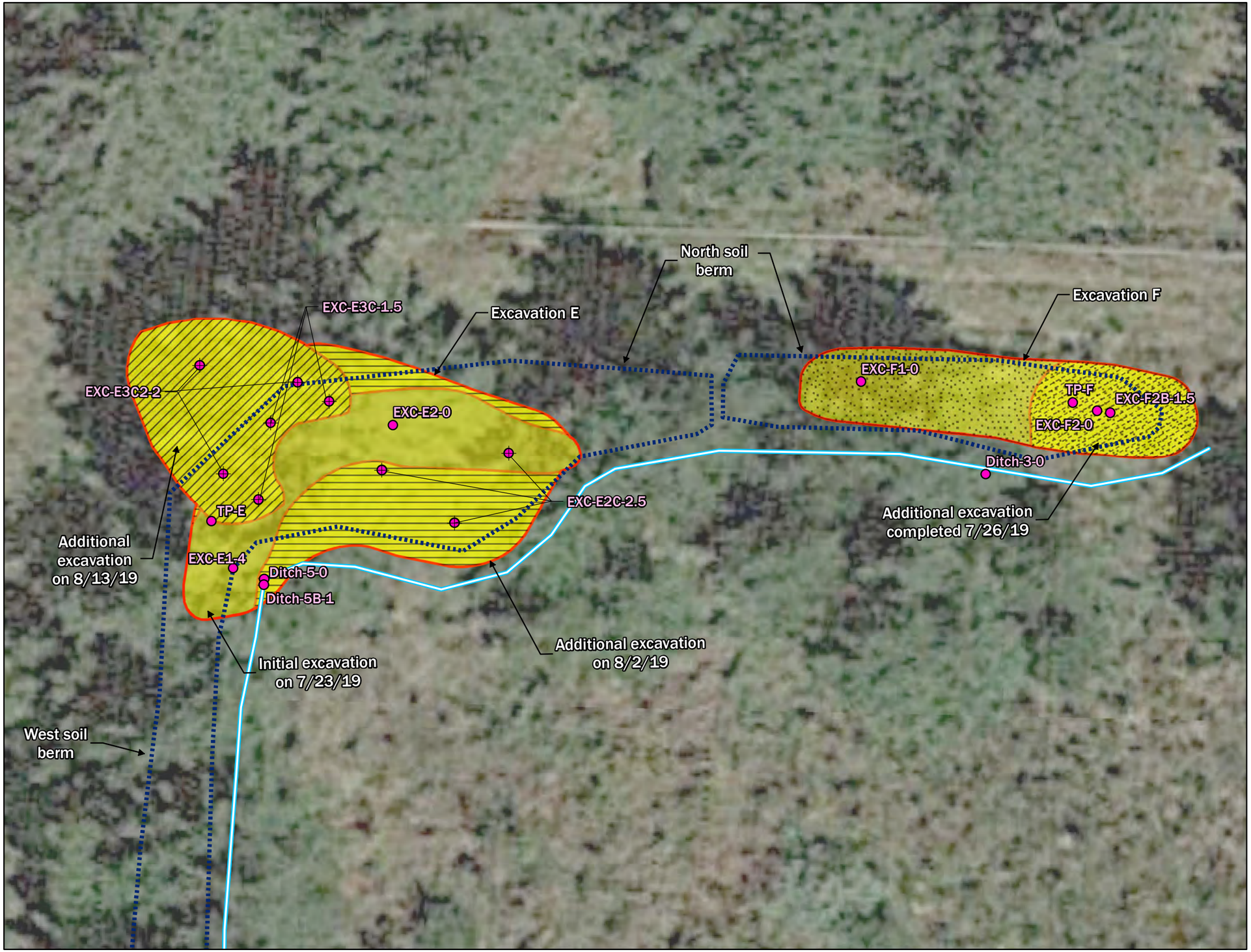


Figure 4A.
Remedial Excavations at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.

Legend

- Discrete grab soil sample
- Composite soil sample
- Ditch
- Final excavation boundary
- Excavation area
- Additional excavation on 7/26/19
- Additional excavation on 8/2/19
- Additional excavation on 8/13/19
- Excavated soils disposed as dangerous waste based on TCLP testing
- Soil berm

N

0 6 12 24 Feet

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Google Earth, Aerial (2018)

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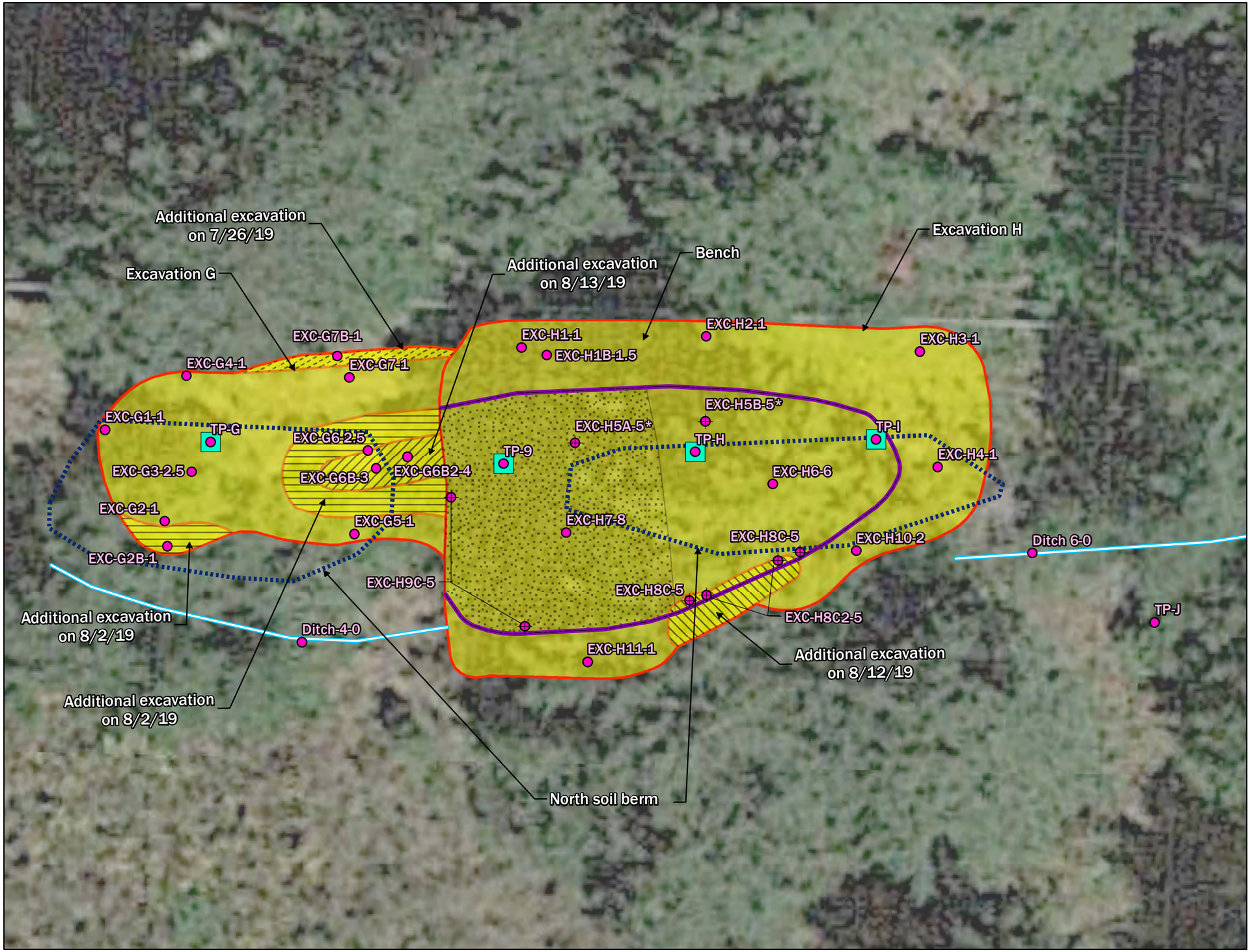
Figure 4B.
Remedial Excavations at the
13.4-Acre Undeveloped Parcel,
Pierce County, Washington.




## Legend

- Discrete grab soil sample
- Composite soil sample
- TP-# Center of test pit
- Ditch
- Approximate boundary between bench and deeper excavation
- Final excavation boundary
- Excavation area
- Additional excavation on 7/26/19
- Additional excavation on 8/2/19
- Additional excavation on 8/12/19
- Additional excavation on 8/13/19
- Excavated soils disposed as dangerous waste based on TCLP testing
- Soil berm

N

0 6 12 24 Feet

HERRERA

Google Earth, Aerial (2018)

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**Table 1. Summary of Test Pit and Ditch Explorations Completed During Site Closure Activities at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Exploration | Location | Approximate Height of Berm (feet) | Total Depth Explored (feet bgs) | Soil Sample Collected? | Observations |
|---|---|---|---|---|---|
| TP-A | South end of west berm | 3 | 4 | TP-A-3 | Dark brown-black sandy GRAVEL with cobbles, trace silt (fill). No odors or soil staining. Black plastic seedling trays, glass, porcelain, brick, tin can, metal screen edging, plastic bags, steel threaded rod, and concrete. |
| TP-B | West berm, north of TP-A | 5 | 5 | TP-B-4 | Dark brown-black sandy GRAVEL with cobbles, trace silt to 4.5 feet (fill), then tan GRAVEL with sand (recessional outwash). No odors or soil staining. Small concrete fragments in upper 2 feet, almost completely free of debris. |
| TP-C | West berm, north of TP-B | 4.5 | 4.5 | TP-C-2 | Dark brown-black sandy GRAVEL with cobbles, trace silt to 3 feet (fill), then tan GRAVEL with sand (recessional outwash). No odors or soil staining. Black plastic seedling trays, Bayer aspirin bottle, glass milk bottle, and ceramic plate. |
| TP-D | North end of west berm | 2.5 | 3.0 | TP-D-1.5 | Dark brown-black sandy GRAVEL with cobbles, trace silt to 2.5 feet (fill), then tan GRAVEL with sand (recessional outwash). No odors or soil staining. Small pieces of ceramic, plastic bag, and dust mask. |
| TP-E | Corner where west and north berms meet | 3 | 3 | TP-E-2 | Dark brown-black silty SAND with gravel and cobbles to 3 feet (fill), then tan GRAVEL with sand (recessional outwash). No odors or soil staining. Cans, brick, rope, plastic, landscaper's cloth. |
| TP-F | North berm, east of TP-E | 3 to 5 | 4 | TP-F-2.5 | Dark brown-black sandy GRAVEL with cobbles, trace silt to 3.5 feet (fill), then tan GRAVEL with sand (recessional outwash). Slight soil staining and petroleum odors. Metal debris, tin can, shoe ("Durkee-Atwood cork, oil-proof Dupont neoprene"), glass, rubber automotive hose. |
| TP-G | North berm, west of TP-9 | 4.5 | 3.5 | TP-G-3 for TCLP | Dark brown-black sandy GRAVEL with cobbles, trace silt (fill). Oil-stained soils with petroleum odors. |
| TP-H | North berm, east of TP-9 | 4.5 | 3.5 | TP-H-3 for TCLP | Dark brown-black sandy GRAVEL with cobbles, trace silt (fill). Oil-stained soils with strong petroleum odors and empty 30-gallon drum. |
| TP-I | North berm, east of TP-H | 4.5 | 2.5 | No | Dark brown-black sandy GRAVEL with cobbles, trace silt (fill). Oil-stained soils with strong petroleum odors and oily clothing fragments. |

**Table 1 (continued). Summary of Test Pit and Ditch Explorations Completed During Site Closure Activities at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Exploration | Location | Approximate Height of Berm (feet) | Total Depth Explored (feet bgs) | Soil Sample Collected? | Observations |
|---|---|---|---|---|---|
| TP-J | Behind north berm, SE of TP-I | 1.5 | 2 | TP-J-0 | Dark brown-black sandy GRAVEL with cobbles, trace silt (mounded native soil), then tan GRAVEL with sand (recessional outwash). No debris, staining, or odors. |
| TP-K | East end of ditch, along north end of Site | No berm present | 2 | TP-K-1 | Dark brown-black sandy GRAVEL with cobbles, trace silt (mounded native soil) to 1.5 feet, then tan GRAVEL with sand (recessional outwash). Empty 30-gallon drum on ground surface, but no debris, staining, or odors. |
| TP-L | At automobile remnants | No berm present | 1 | TP-L-0 | Dark brown-black sandy GRAVEL with cobbles, trace silt (native soil). Automobile remnants (seat springs and vinyl covering) removed. No soil staining or odors. |
| Ditch 1 | Behind TP-B to SE | NA | 1 | Ditch-1-0 | Tan GRAVEL with sand, silt cobbles (recessional outwash). No soil staining or odors. |
| Ditch 2 | Behind TP-D to SE | NA | 1 | Ditch-2-0 | Tan GRAVEL with sand, silt cobbles (recessional outwash). No soil staining or odors. |
| Ditch 3 | Behind TP-F to SW | NA | 1 | Ditch-3-0 | Tan GRAVEL with sand, silt cobbles (recessional outwash). No soil staining or odors. |
| Ditch 4 | Behind TP-G to South | NA | 1 | Ditch-4-0 | Tan GRAVEL with sand, silt cobbles (recessional outwash). No soil staining or odors. |
| Ditch 5 | Behind TP-E to SE | NA | 2 | Ditch-5-0<br>Ditch-5B-1 | Tan GRAVEL with sand, silt cobbles (recessional outwash). No soil staining or odors. |
| Ditch 6 | Behind TP-I to SE | NA | 1 | Ditch-6-0 | Tan GRAVEL with sand, silt cobbles (recessional outwash). No soil staining or odors. |

NA = Not applicable

Soil samples from TP-A through TP-K and Ditch-1 through Ditch-4 were submitted to OnSite Environmental in Redmond, Washington, for the following analyses:

- Petroleum hydrocarbon identification (HCID) according to Method Northwest Total Petroleum Hydrocarbons-HCID

Based on the HCID and metals results, follow-up analyses were conducted on select samples for the following:

- Gasoline-range petroleum hydrocarbons according to Method Northwest Total Petroleum Hydrocarbons-Gasoline Extended (NWTPH-Gx)
- Diesel-range petroleum hydrocarbons according to Method NWTPH-Diesel Extended (NWTPH-Dx)
- Volatile organic compounds (VOCs) according to US Environmental Protection Agency (EPA) Method 8260C including the following compounds listed in MTCA table 830-1:
    - Benzene, toluene, ethylbenzene, and total xylenes (BTEX)
    - Fuel additives and blending compounds: methyl tert-Butyl Ether (MTBE), tert-Butyl Alcohol (TBA), tert-Butyl Ethyl Ether (ETBE), and tert-Amyl Methyl Ether (TAME)
    - Halogenated VOCs (HVOCs)
- Polycyclic Aromatic Hydrocarbons (PAHs) including naphthalene according to EPA Method 8270D/SIM
- PCBs according to EPA Method 8082A
- Total metals (Cadmium, Chromium, Lead, Nickel, and Zinc) according to Method 6010D.

Based on the totals metals results, a few samples were also analyzed for:

- Soluble hexavalent chromium by EPA Method 7196A.

Soil samples collected from TP-J, TP-L, Ditch-5, and Ditch-6 were submitted to an onsite laboratory, Libby Environmental, Inc. (Libby) for the following analysis (note that some analyses indicated below were subcontracted out to Fremont Analytical [Fremont] in Seattle, Washington):

- Gasoline-range petroleum hydrocarbons according to Method NWTPH-Gx
- Diesel-range petroleum hydrocarbons according to Method NWTPH-Dx

- VOCs according to EPA Method 8260C including the following compounds listed in MTCA table 830-1:
    - BTEX
    - MTBE, TBA, ETBE, and TAME
    - HVOCs
- cPAHs including naphthalene according to EPA Method 8270D/SIM (subcontracted to Fremont)
- PCBs according to EPA Method 8082 (subcontracted to Fremont)
- Total metals (Cadmium, Chromium, Lead, Nickel, and Zinc) according to EPA Method 7010 (Nickel analysis subcontracted to Fremont)

Soil samples collected from TP-G and TP-H were submitted to Spectra Laboratories (Spectra) of Tacoma, Washington, for TCLP lead analysis to characterize the soils for disposal. No soil sample was collected from TP-I because obvious soil contamination was observed; the contaminated soils were later removed during remedial activities at Excavation H, which encompassed the TP-H and TP-I test pit exploration areas.

### 3.2.3. Remedial Excavations and Sampling

This section describes remedial excavation and sampling activities. A total of four remedial excavations were completed at the Site (see Figures 3, 4A, and 4B) including:

- Excavation E near the northwest corner of the site, at the intersection of the west and north soil berms, where lube oil and lead were detected in the test pit soil sample above the concentrations listed in Table 749-2 (WAC 173-340-900) for the protection of ecological receptors.
- Excavation F along the north berm where concentrations of lube oil and lead in the test pit sample exceeded the ecological cleanup level, and total cPAHs exceeded the MTCA Method A CUL for unrestricted land use.
- Excavation G along the north berm where stained soils impacted with waste oil were observed during the test pit explorations.
- Excavation H along the north berm where stained soils impacted with waste oil were observed during test pit explorations at TP-H and TP-I, as well as TP-9 (S&W 2019).

Manifests for soil disposed off site are included in Appendix D. A total of 242.49 tons of soils failed the TCLP test for lead and were designated as Dangerous Waste per Chapter 173-303

WAC and disposed at Chemical Waste Management's landfill, 17629 Cedar Springs Lane, Arlington, Oregon. A total of 759.28 tons of soils that did not fail TCLP testing for lead but contained contaminants at concentrations exceeding ecological screening levels and/or Method A cleanup levels, were disposed as petroleum-contaminated soils (PCS) at the Land Recovery, Inc. (LRI) 304th Landfill, 17925 Meridian Street East, Puyallup, Washington.

On July 22, at the start of excavation activities, one truck and trailer load of soils classified as Dangerous Waste was removed from the TP-9 source area and directly loaded using an excavator into the truck and trailer for offsite disposal. Thereafter, all contaminated soils were removed by Langseth using either a large or mini excavator, loaded into a 12-yard dump truck, and transferred to the soil stockpile area south of the north berm.

All soils were stockpiled on plastic sheeting and covered with plastic sheeting at the end of each day to prevent the spread of contaminants via wind or rainfall. Soils classified as Dangerous Waste from Excavations F and H were placed together in one stockpile, and other soils classified as PCS were placed in separate stockpiles. Each stockpile was labeled with spray paint to identify the excavation it came from until the soils could be loaded off site for disposal. Langseth hired a water truck to control dust by spraying down the access road and clearing as needed.

Soil sample locations and the final boundaries of remedial excavations and soil stockpiles were recorded in the field using a handheld GPS unit and the coordinates were downloaded and translated onto figures generated for this report.

#### 3.2.3.1. Sample Identification

Excavation samples were generally identified using the following system, with a few exceptions as noted:

- Prefix *Exc* for excavation
- Designator followed by a number to indicate the excavation and sequential number of the sample collected from that excavation
- A letter and/or number after the designator to indicate a sample collected at that location after additional soil was excavated
- A final number indicating the top depth of the sample interval

For example, Exc-E2-0 represents the second sample from Excavation E at a depth of 0 to 1 foot bgs. In some cases, the letter "C" was added after the middle letter and number to indicate a composite sample was collected, as in Exc-E3C-1.5. A "2" was added after the "C" in sample Exc-E3C2-2.5 to indicate the second composite sample collected at the Excavation E sample 3 location after additional soil removal. For sample Exc-G2B-1, the "B" indicates the second sample collected at the Excavation G sample 2 location after additional soil removal. Other exceptions

include samples Exc-H5A-5 and Exc-H5B, which were discrete samples collected only for gasoline-range petroleum hydrocarbon analysis by the mobile laboratory.

#### 3.2.3.2. Sampling and Laboratory Analysis

Table 2 provides a summary of the remedial excavations and sequence of initial soil sampling, follow-up sampling, and final confirmation sampling.

Soil samples for TCLP analysis were submitted to Spectra. Soil samples from the initial excavation activities were submitted to Libby's mobile lab on July 25 and 26. Subsequent samples were submitted to Libby's fixed laboratory with some analyses subcontracted to Spectra and Fremont Analytical (Fremont) in Seattle, Washington as noted below. Soil samples from the remedial excavations were submitted for the following analyses:

- TCLP testing on one or more samples from test pits, excavations, and stockpiles to characterize soils for disposal.
- Gasoline-range petroleum hydrocarbons according to Method NWTPH-Gx.
    - As remedial activities progressed beyond July 26, testing for gasoline-range petroleum hydrocarbons was not performed on subsequent samples after analytical results for 42 soil samples from test pits, ditches, and remedial excavations showed no detections above laboratory reporting limits via analysis by HCID and NWTPH-Gx testing methods.
- VOCs, BTEX, fuel additives (MTBE, TBA, ETBE, and TAME), and HVOCs according to EPA Method 8260C.
- Analysis for VOCs, BTEX, fuel additives, and HVOCs was initially performed on samples analyzed for gasoline-range petroleum hydrocarbons. As remedial activities progressed beyond July 26, testing for these constituents was suspended after analytical results for 28 soil samples from test pits, ditches, and remedial excavations showed that none of these compounds were detected above laboratory reporting limits.
- Diesel-range petroleum hydrocarbons according to Method NWTPH-Dx.
- cPAHs including naphthalene according to EPA Method 8270D/SIM (subcontracted to Fremont).
- cPAH analysis was performed to confirm "clean" confirmation samples below the ecological or MTCA Method A CULs and was generally not performed on samples with high concentrations of lube oil that would require excavation and disposal.
- PCBs according to EPA Method 8082 (subcontracted to Fremont).

- PCB analysis was performed on samples where lube oil was detected, and to confirm "clean" confirmation sample TP-L-0 because of its location far removed from the soil berms and TP-9 source area.

- Total metals (Cadmium, Chromium, Lead, Nickel, and Zinc) according to EPA Method 7010 (Nickel analysis subcontracted to Fremont).

**Table 2. Summary of Remedial Excavations and Sampling at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Excavation E | | | |
|---|---|---|---|
| **Initial Sample** | **Following Initial Excavation** | **Following Expanded Excavation** | **Following Further Expanded Excavation** |
| TP-E-2 (06/27/19)<br>NW Corner Berm<br>**Lube Oil at 640 mg/kg**<br>**Lead at 410 mg/kg** | Exc-E1-4 (07/23/19)<br>SW End (4 feet below top of initial berm)<br>No exceedance | – | – |
| | Exc-E2-0 (07/23/19)<br>NE end of initial excavation<br>**Lube Oil at 3,100 mg/kg** | Exc-E2C-2.5 (08/02/19)<br>Composite from NE area of excavation<br>No exceedance | – |
| | – | Exc-E3C-1.5 (08/02/19)<br>NW area at expanded excavation<br>**cPAHs (TEF) at <0.529 mg/kg**<br>**Lead at 246 mg/kg** | Exc-E3C2-2 (08/13/19)<br>Resampled at NW area, expanded excavation<br>No exceedance |
| | Exc-E-SP1 and Exc-E-SP2 (07/23/19)<br>Stockpile composites for disposal characterization (TCLP Lead)<br>No exceedance | – | – |
| | Ditch 5 (07/23/19)<br>Behind Excavation E<br>**Lube Oil at 504 mg/kg** | Ditch-5B-1 (07/26/19)<br>Resampled at Ditch-5<br>No exceedance | – |
| **Excavation F** | | | |
| **Initial Sample** | **Following Initial Excavation** | **Following Expanded Excavation** | **Follow Up** |
| TP-F-2.5 (06/27/19)<br>North berm<br>**Lube Oil at 8,500 mg/kg**<br>**cPAHs (TEF) at 0.332 mg/kg**<br>**Lead at 3,600 mg/kg**<br>**TCLP Lead at 6.4 mg/L** | Exc-F1-0 (07/23/19)<br>West bottom<br>No exceedance | | Exc-F-Comp (07/30/19)<br>Composite from completed excavation (TCLP Lead)<br>No exceedance* |
| | Exc-F2-0 (07/23/19)<br>East bottom<br>**Lube Oil at 1,090 mg/kg (metals not analyzed)** | Exc-F2B-1.5 (07/26/19)<br>Resampled at Exc-F2 after additional excavation<br>No exceedance (metals analyzed) | |
| | Exc-F-SP1 (07/23/19)<br>Composite from west end of berm for disposal characterization<br>**TCLP Lead at 5.30 mg/L** | – | |
| Ditch-3-0 (06/27/19)<br>Behind Test Pit F to SW<br>No exceedance | – | – | – |

**Table 2 (continued). Summary of Remedial Excavations and Sampling at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Excavation G | | | |
|---|---|---|---|
| **Initial Sample** | **Following Initial Excavation** | **Following Expanded Excavation** | **Following Further Expanded Excavation** |
| TP-G (06/27/19)<br>Test pit west of TP-9<br>**Apparent oil staining**<br><br>TP-G-3 (07/23/19)<br>Composite from berm for disposal characterization<br>(TCLP Lead)<br>No exceedance | Exc-G1-1 (07/24/19)<br>West wall<br>No exceedance | – | – |
| | Exc-G2-1 (07/24/19)<br>SW wall<br>Lube oil at 1,360 mg/kg<br>(metals not analyzed) | Exc-G2B-1 (08/02/19)<br>Resampled SW wall after expanded excavation<br>No exceedance<br>(metals analyzed) | – |
| | Exc-G3-2.5 (07/24/19)<br>West bottom<br><br>Exc-G4-1 (07/25/19)<br>NW wall<br><br>Exc-G5-1 (07/25/19)<br>SW wall<br><br>No exceedances | – | – |
| | Exc-G6-2.5 (07/24/19)<br>East bottom<br>**Lube Oil at 4,090 mg/kg** | Exc-G6B-3 (08/02/19)<br>Resampled at Exc-G6 after additional excavation<br>**Lube Oil at 1,240 mg/kg**<br>**cPAHs (TEF) at <0.529 mg/kg** | Exc-G6B2-4 (08/13/19)<br>Resampled at Exc-G6 after additional excavation<br>No exceedance |
| | Exc-G7-1 (07/25/19)<br>NE wall<br>**Lube Oil at 726 mg/kg**<br>(metals not analyzed) | Exc-G7B-1 (07/26/19)<br>Resampled NE wall after expanded excavation<br>No exceedance<br>(metals analyzed) | – |
| Ditch-4-0 (06/29/19<br>Behind Test Pit G to S<br>No exceedance | – | – | – |

**Table 2 (continued). Summary of Remedial Excavations and Sampling at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Excavation H (TP-9) | | | |
|---|---|---|---|
| **Initial Sample** | **Following Initial Excavation** | **Following Expanded Excavation** | **Following Further Expanded Excavation** |
| TP-9:2.5 (03/19/19)<br>Test Pit 9<br>**Lube Oil at 130,000 mg/kg**<br>**Lead at 7,950 mg/kg**<br>**Cadmium at 14.5 mg/kg**<br>**cPAHs at 3.38 mg/kg**<br>**TCLP lead at 6.01 mg/L**<br>TP-9:8 (03/19/19)<br>Test Pit 9<br>**Lube Oil at 2,990 mg/kg**<br>**Lead at 1,680 mg/kg** | TP9-TCLP-5 (07/22/19)<br>Composite at 5 feet for disposal characterization<br>**TCLP Lead at 5.95 mg/L** | – | Exc-H/TP9-Comp (7/30/19)<br>Composite from nearly completed excavation<br>No exceedance |
| | Exc-G6B2-4 (08/13/19)<br>Confirmation sample for Excavation G to west of TP-9<br>No exceedance | – | – |
| | Exc-H/TP9-Comp (07/30/19)<br>Exc-H9C-5 from nearly completed excavation (TCLP Lead)<br>No exceedance | – | – |
| | Exc-H6-6 (08/2/19)<br>Confirmation base sample collected E of TP-9 at 6 feet<br>No exceedance | – | – |
| | Exc-H7-8 (07/26/19)<br>Confirmation base sample collected SE of TP-9 at 8 feet<br>No exceedance | – | – |

**Table 2 (continued). Summary of Remedial Excavations and Sampling at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Excavation H (TP-9) (continued) | | | |
|---|---|---|---|
| **Initial Sample** | **Following Initial Excavation** | **Following Expanded Excavation** | **Following Further Expanded Excavation** |
| TPH-H (06/27/19)<br>Test pit east of TP-9<br>Apparent oil staining | Exc-H1-1 (07/26/19)<br>NW bench<br>**Lube Oil at 1,200 mg/kg**<br>(metals not analyzed) | Exc-H1B-1.5 (07/26/19)<br>Resampled at Exc-H1 after additional excavation<br>No exceedance<br>(metals analyzed) | – |
| | Exc-H2-1 (07/26/19)<br>N middle bench<br><br>Exc-H3-1 (07/26/19)<br>NE corner on bench<br><br>Exc-H4-1 (07/26/19)<br>SE corner on bench<br><br>Exc-H5A-5 and Exc-H5B-5 (07/26/19)<br>N wall for Gx and volatiles<br><br>Exc-H5C-5 (07/26/19)<br>N wall composite of H5A and H5B<br><br>Exc-H6-6 (07/26/19)<br>East bottom<br><br>Exc-H7-8 (07/26/19)<br>West bottom<br><br>No exceedances | Exc-H8C-5 (08/02/19)<br>SE wall composite<br>**Lube Oil at 2,610 mg/kg**<br>**cPAHs (TEF) at <0.529 mg/kg** | Exc-H8C2-5 (08/12/19)<br>SE wall composite at Exc-H8C after additional excavation<br>No exceedance |
| | | Exc-H9C-5 (08/02/19)<br>SW walls composite<br><br>Exc-H10-2 (08/02/19)<br>SE bench after trees removed<br><br>Exc-H11-1 (08/02/19)<br>South bench after loadout area excavated<br><br>No exceedances | – |

**Bold** text indicates exceedance one or more of the following ecological screening levels or MTCA Method A CUL for unrestricted land use:

- **Lube Oil: TEE = 460 mg/kg; MTCA Method A CUL = 2,000 mg/kg**
- **Lead: TEE = 220 mg/kg; MTCA Method A CUL = 250 mg/kg**
- **Cadmium: MTCA Method A CUL = 2.0 mg/kg**
- **TCLP Lead: Dangerous Waste limit for the Toxicity Characteristic = 5 mg/L**
- **cPAHs (TEF): MTCA Method A CUL = 0.1 mg/kg**

< = Not detected above laboratory reporting limit shown

cPAHs (TEF) = Carcinogenic polycyclic aromatic hydrocarbons (toxicity equivalency factor)

CUL = Cleanup level

mg/kg = Milligrams per kilogram

mg/L = Milligrams per liter

MTCA = Model Toxics Control Act

TCLP = Toxicity characteristic leaching procedure

### 3.2.3.3. Excavation E

On July 23, excavation activities began at Excavation E (see Figure 4A). Observations at Excavation E included stained soils with petroleum odors, plastic, vinyl, rubber hoses, glass bottles, wire, bricks, landscaper's cloth, rope, steel bedsprings, cans, and other metal debris.

Initial soil samples were collected on July 23. Because elevated concentrations of lube oil were detected in sample Ditch-5-0 from the ditch southeast of the initial excavation, and sample Exc-2-0 from the northeast end of the excavation, additional soils were removed on August 2. After elevated concentrations of cPAHs and lead were detected in composite sample Exc-E3C-1.5 from the expanded excavation, additional soils were removed on August 13 and clean confirmation composite sample Exc-E3C2-2 was collected.

Because the concentrations of TCLP lead detected in composite soil stockpile samples Exc-E-SP1 and EXC-E-SP2 (0.104 mg/L and 0.585 mg/L, respectively) did not exceed the TCLP lead limit, soils from Excavation G were disposed as PCS.

### 3.2.3.4. Excavation F

On July 22, excavation activities began at Excavation F (see Figure 4A). Observations included plastic and metal debris and petroleum-stained soils with strong odors. Initial soil samples were collected on July 23. Because an elevated concentration of lube oil was detected in sample Exc-F2-0 from the east end of the excavation, additional soils were removed on July 26, and clean confirmation sample EXC-F2B-1.5 was collected.

Because the concentration of TCLP lead (5.30 mg/L) detected in composite soil stockpile sample Exc-F-SP1 exceeded the TCLP lead limit, soils from Excavation F were disposed as Dangerous Waste. Upon completion of excavation activities, TCLP lead was not detected above the reporting limit in composite soil sample Exc-F-Comp, confirming that all Dangerous Waste soils were removed from Excavation F.

### 3.2.3.5. Excavation G

On July 23, excavation activities began at Excavation G (see Figure 4B). Observations included metal debris, stained soils with petroleum odors, empty 5-gallon and 55-gallon containers, steel pipe, and wooden timber stained with waste oil. Initial soil samples were collected on July 24 and 25, from the excavation bottom and side walls. Due to elevated concentrations of lube oil detected in three samples, additional soil was excavated on July 26 from the northeast sidewall and on August 2 from the east bottom area and southwest excavation sidewall, and additional samples were collected. Due to elevated concentrations of lube oil and cPAHs detected in sample Exc-G6B-3, the east bottom area was excavated deeper again on August 13 and clean confirmation sample Exc-G6B2-4 was collected.

Because the concentration of lead (1.36 mg/L) detected in composite soil stockpile sample TP-G-3 did not exceed the TCLP lead limit, soils from Excavation G were disposed as PCS.

#### 3.2.3.6. Excavation H (TP-9)

On July 22, remedial excavation and soil sampling activities began at Excavation H (the area around TP-9 was renamed to correspond to the location of TP-H, and to simplify the soil sample naming conventions) (see Figure 4B). The initial excavation of soils at the TP-9 source area focused on removing contaminated soils designated as Dangerous Waste based on TCLP testing results. In March 2019, lead was detected in sample TP9:2.5 at a concentration of 6.01 mg/L, which exceeded the TCLP limit of 5 mg/L (S&W 2019).

One truck and trailer volume of soil was initially hauled off site for disposal as Dangerous Waste at Chemical Waste Management's landfill, 17629 Cedar Springs Lane, Arlington, Oregon (see Appendix D). A composite sample was then collected at 5 feet bgs to characterize deeper soils at the TP-9 source area for disposal; the concentration of TCLP lead (5.95 mg/L) detected in sample TP9-TCLP-5 exceeded the TCLP limit of 5.0 mg/L. Therefore, the deeper soils excavated below 5 feet bgs from the TP-9 area were stockpiled on plastic sheeting and were also disposed as Dangerous Waste (see Figure 3). However, TCLP lead concentrations detected in sample TP-G-3 collected from Excavation G to the west and TP-H-3 from Test Pit H to the east of the TP-9 source area did not exceed the TCLP limit for lead. Therefore, soils from Excavation G and areas of Excavation H beyond the TP-9 source area were stockpiled on plastic sheeting and later disposed as PCS, not Dangerous Waste.

Observations at Excavation H included significant areas of petroleum-stained soils with strong petroleum odors, several empty rusty 30-gallon drums, steel shovel, miscellaneous metal debris, bricks, porcelain, and a two-burner electric kitchen stove.

On July 26, initial confirmation soil samples were collected from Excavation H. Because elevated concentrations of lube oil were detected in sample Exc-H1-1 from the northwest bench at the top of the excavation, additional soils were removed and clean confirmation sample Exc-H1B-1.5 was collected. At the southeast corner of the excavation, petroleum-stained soils were observed against the base of two large Douglas-fir trees. On August 1, the trees were removed on behalf of the County by Hunter's Tree Service, and the contaminated soils were excavated. Due to the elevated concentrations of lube oil and cPAHs detected in composite sample Exc-H8C-5 from the southeast sidewall, additional soil was removed on August 12 and clean confirmation sample Exc-H8C2-5 was collected.

### 3.2.4. Monitoring Well Installation

From July 30 through August 1, 2019, three monitoring well borings (MW-1, MW-2, and MW-3) were advanced by Holocene Drilling using a Sonic drill rig equipped with a 4-inch-diameter core barrel for soil classification and field screening (see Figure 3). Well logs, including construction details are provided in Appendix E. A 6-inch-diameter casing was installed to keep the hole open during drilling. Discrete soil samples were collected within the core barrel at variable intervals (less than 10 feet) depending on the difficulty of drilling.

The sample was extruded from the core barrel by vibration. Following retrieval, each sample was logged by a Washington State licensed geologist for soil lithology and screened for odors that may indicate contamination. Soil encountered during drilling was visually inspected for staining and classified in accordance with the Unified Soil Classification System (USCS).

The monitoring wells were constructed with 2-inch-diameter Schedule 40 polyvinyl chloride (PVC) blank well casing flush threaded with a 10-foot section of 0.010-inch slotted machine cut well screen casing at the base. A filter pack of clean silica sand was placed in the annular space between the screened casing and borehole to a height approximately 2 feet above the top of the screened well casing. Bentonite chips were placed above the filter pack to within 2 feet of the ground surface. Monitoring well MW-1 was completed below grade with a watertight well monument box set in a concrete surface seal, and MW-2 and MW-3 were completed with above ground watertight well monuments surrounded by three concrete-filled steel bollards.

#### 3.2.4.1. Well Development

Following installation, the monitoring wells were developed with a submersible pump. Development continued until levels of sand and silt were reduced and water removed from the well was generally of clear quality. Development water from each well was contained in 55-gallon drums, stored temporarily at the site, pending analytical results.

#### 3.2.4.2. Groundwater Sampling from Monitoring Wells

Groundwater samples were collected during two quarterly monitoring events on August 5 and November 1, 2019; field notes are provided in Appendix F. General procedures for collecting groundwater samples from monitoring wells were as follows:

- The well monument cover was removed, and the condition of the well and surrounding area was inspected.
- Observations were noted in the field notebook and on the well sampling log.
- The well casing plug was removed.
- The depth to groundwater was measured from the top of the PVC well casing to the nearest 0.01 foot using an electronic water level indicator.
- The date, time, and measurements were recorded on the well sampling log.
- Care was taken to ensure that no bubbles or headspace were present for the VOC samples.
- Containers were securely capped, labeled, and placed into a chilled cooler for storage, prior to delivery to the laboratory.
- The date and time of sample collection were recorded on the well sampling log and chain-of-custody form.

The wells were purged of standing water using a low-flow purge method, ranging from 0.4 to 0.5 liters per minute with clean, dedicated polyethylene tubing and a submersible pump. Tubing was placed approximately 5 feet below the top of the water table and opposite the screened zone in the three monitoring wells.

During purging, pH, water temperature, dissolved oxygen, specific conductivity, water level, and pumping rate were measured. The amount of water purged, water parameter measurements, and time of collection were recorded on the well sampling log. Recharge occurred quickly for the wells; the water levels remained constant during purging and sampling. Purged water removed during development was placed into 55-gallon drums stored on site.

Samples were collected with the same dedicated polyethylene tubing used to purge the well by pumping directly into sample containers provided by the analytical laboratory. The samples for dissolved lead analyses were field filtered through a 0.45-micron filter. Following sample collection, the well casing plug was replaced, and the well monument cover secured.

Each sample was submitted for the following analyses:

- Gasoline-range petroleum hydrocarbons (NWTPH-Gx)
- Diesel-range petroleum hydrocarbons (NWTPH-Dx)
- Total and dissolved lead (samples were field filtered for the dissolved analyses)
- Ethylene dibromide (EPA8011)
- cPAHs – Low level (EPA8270D/SIM)

## 3.3. SAMPLING/ANALYTICAL RESULTS

Sampling/analytical results for remedial activities conducted at the Site are presented in the following section.

### 3.3.1. Quality Analyses

Laboratory analyses were performed by Libby, OnSite, Spectra, and Fremont, all Ecology-accredited laboratories. Laboratory reports and chain of custody forms are provided in Appendix G. A summary of samples collected, and analyses performed is provided in Table 3.

**Table 3. Summary of Soil Sampling Analytical Data from Test Pits, Ditches, and Excavations at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Parameter | Sample Identification | | | | | | | | | Priority Contaminants of Ecological Concern[b] (mg/kg) | MTCA Method A for Unrestricted Land Use[c] (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | TP-A-3 | TP-B-4 | TP-C-2 | TP-D-1.5 | TP-E-2 | TP-F-2.5 | TP-J-0 | TP-K-1 | TP-L-0 | | |
| Date Collected | 6/27/19 | 6/27/19 | 6/27/19 | 6/27/19 | 6/27/19 | 6/27/19 | 7/22/19 | 6/27/19 | 7/23/19 | | |
| Sample Top Depth (feet) | 3 | 4 | 2 | 1.5 | 2 | 2.5 | 0 | 0 | 0 | | |
| Sample Type | Grab | Grab | Grab | Grab | Grab | Grab | Grab | Grab | Grab | | |
| Description | West berm | West berm | West berm | West berm | NW corner berm | North berm | Behind north berm | By rusted drum on ground | Abandoned auto | | |
| **Hydrocarbon Identification** | | | | | | | | | | | |
| Gasoline Range Organics | U (23) | U (23) | U (23) | **Detected** | **Detected** | **Detected** | – | U (22) | – | – | – |
| Diesel Range Organics | U (57) | U (57) | U (57) | U (57) | **Detected** | **Detected** | – | U (56) | – | – | – |
| Lube Oil Range Organics | **Detected** | **Detected** | U (110) | **Detected** | **Detected** | **Detected** | – | **Detected** | – | – | – |
| **NWTPH-Gx (mg/kg)** | | | | | | | | | | | |
| Gasoline Range | – | – | – | U (5.9) | U (5.9) | U (5.4) | U (10) | U (5.2) | U (10) | 200 | 100 |
| **NWTPH-Dx (mg/kg)** | | | | | | | | | | | |
| Diesel Range | U (28) | U (29) | – | U (29) | U (49) | U (620) | U (50) | U (28) | U (50) | 460 | 2,000 |
| Lube Oil Range | **250** | **300** | – | **300** | **640** | **8,500** | U (250) | **450** | U (250) | 460 | 2,000 |
| **Volatile Organic Compounds (mg/kg)** | | | | | | | | | | | |
| Methyl tert-Butyl Ether (MTBE) | – | – | – | U (0.001) | U (0.001) | U (0.001) | U (0.05) | – | U (0.05) | – | – |
| Tert-butanol (TBA) | – | – | – | U (0.026) | U (0.024) | U (0.026) | U (0.02) | – | U (0.02) | – | – |
| Ethyl-tert-Butyl Ether (ETBE) | – | – | – | U (0.0053) | U (0.0048) | U (0.0053) | U (0.10) | – | U (0.10) | – | – |
| Tert-Amyl Methyl Ether (TAME) | – | – | – | U (0.0053) | U (0.0048) | U (0.0053) | U (0.02) | – | U (0.02) | – | – |
| Benzene | – | – | – | U (0.001) | U (0.001) | U (0.001) | U (0.02) | – | U (0.02) | – | 0.03 |
| Toluene | – | – | – | U (0.0049) | U (0.0048) | U (0.0050) | U (0.10) | – | U (0.10) | – | 7 |
| Ethylbenzene | – | – | – | U (0.001) | U (0.001) | U (0.001) | U (0.05) | – | U (0.05) | – | 6 |
| Total xylenes | – | – | – | U (0.002) | U (0.002) | U (0.002) | U (0.15) | – | U (0.15) | – | 9 |
| Methylene chloride | – | – | – | U (0.0049) | U (0.0048) | U (0.0050) | U (0.02) | – | U (0.02) | – | 0.02 |
| **Polycyclic Aromatic Hydrocarbons (PAHs)(mg/kg)** | | | | | | | | | | | |
| Naphthalene | **0.016** | U (0.008) | – | **0.008** | U (0.008) | **0.160** | – | **0.010** | U (0.050) | – | 5 |
| 2-Methylnaphthalene | U (0.008) | U (0.008) | – | U (0.008) | **0.009** | **0.270** | – | **0.016** | U (0.050) | – | 320[d] |
| 1-Methylnaphthalene | U (0.008) | U (0.008) | – | U (0.008) | U (0.008) | **0.110** | – | U (0.007) | U (0.050) | – | 34.5[d] |
| Benzo(a)anthracene | U (0.008) | U (0.008) | – | U (0.008) | U (0.008) | **0.067** | – | U (0.007) | U (0.050) | – | 1.37[d] |
| Benzo(a)pyrene | U (0.008) | U (0.008) | – | U (0.008) | U (0.008) | **0.290** | – | U (0.007) | U (0.050) | 30 | 0.1 |
| Benzo(b)fluoranthene | **0.011** | U (0.008) | – | **0.010** | **0.030** | **0.110** | – | **0.020** | U (0.050) | – | 1.37[d] |
| Benzo(j,k)fluoranthene | U (0.008) | U (0.008) | – | U (0.008) | U (0.008) | **0.083** | – | U (0.007) | U (0.050) | – | 13.7[d] |
| Chrysene | **0.013** | U (0.008) | – | **0.009** | **0.033** | **0.250** | – | **0.020** | U (0.050) | – | 137[d] |
| Dibenz(a,h)anthracene | U (0.008) | U (0.008) | – | U (0.008) | U (0.008) | **0.028** | – | U (0.007) | U (0.050) | – | 0.137[d] |
| Indeno(1,2,3-cd)pyrene | U (0.008) | U (0.008) | – | U (0.008) | **0.013** | **0.110** | – | **0.012** | U (0.050) | – | 1.37[d] |
| cPAHs (TEF)[a] | **0.007** | U (0.006) | – | **0.007** | **0.010** | **0.332** | – | **0.008** | U (0.038) | – | 0.1 |

**Table 3 (continued). Summary of Soil Sampling Analytical Data from Test Pits, Ditches, and Excavations at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Parameter | Sample Identification | | | | | | | | | Priority Contaminants of Ecological Concern[b] (mg/kg) | MTCA Method A for Unrestricted Land Use[c] (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | TP-A-3 | TP-B-4 | TP-C-2 | TP-D-1.5 | TP-E-2 | TP-F-2.5 | TP-J-0 | TP-K-1 | TP-L-0 | | |
| Date Collected | 6/27/19 | 6/27/19 | 6/27/19 | 6/27/19 | 6/27/19 | 6/27/19 | 7/22/19 | 6/27/19 | 7/23/19 | | |
| Sample Top Depth (feet) | 3 | 4 | 2 | 1.5 | 2 | 2.5 | 0 | 0 | 0 | | |
| Sample Type | Grab | Grab | Grab | Grab | Grab | Grab | Grab | Grab | Grab | | |
| Description | West berm | West berm | West berm | West berm | NW corner berm | North berm | Behind north berm | By rusted drum on ground | Abandoned auto | | |
| **Polychlorinated Biphenyls (PCBs) (mg/kg)** | | | | | | | | | | | |
| Total PCBs | U (0.057) | U (0.057) | – | U (0.058) | U (0.057) | **0.066** | – | U (0.056) | U (0.001) | 2 | 1 |
| **Total Metals** | | | | | | | | | | | |
| Cadmium | U (0.57) | U (0.57) | U (0.56) | U (0.58) | **0.57** | **2.6** | – | U (0.56) | U (1.0) | 220 | 250 |
| Chromium (total) | **17** | **17** | **16** | **18** | **21** | **28** | – | **20** | U (5.0) | 42 | 2,000 |
| Chromium (hexavalent) | – | – | – | – | U (1.1) | U (1.2) | – | U (1.1) | – | – | 19 |
| Lead | **32** | **12** | U (5.6) | **19** | **410** | **3,600** | – | **110** | U (5.0) | 220 | 250 |
| Nickel | **17** | **20** | **18** | **19** | **20** | **22** | – | **20** | **2.4** | 100 | 1,600[d] |
| Zinc | **95** | **42** | **35** | **55** | **81** | **130** | – | **35** | U (5.0) | 270 | 24,000[d] |
| **TCLP Lead (mg/L)** | – | – | – | – | – | **6.4** | – | U (0.20) | – | NA | 5.0[e] |

SEE END OF TABLE FOR TABLE NOTES.

**Table 3 (continued). Summary of Soil Sampling Analytical Data from Test Pits, Ditches, and Excavations at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Parameter | Sample Identification | | | | | | | | | | Priority Contaminants of Ecological Concern[b] (mg/kg) | MTCA Method A for Unrestricted Land Use[c] (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ditch-1-0 | Ditch-2-0 | Ditch-3-0 | Ditch-4-0 | Ditch-5-0 | Ditch-5B-1 | Ditch-6-0 | Exc-E1-4 | Exc-E2-0 | Exc-E2C-2.5 | | |
| Date Collected | 6/27/19 | 6/27/19 | 6/27/19 | 6/27/19 | 7/23/19 | 7/26/19 | 7/23/19 | 7/23/19 | 7/23/19 | 8/2/19 | | |
| Sample Top Depth (feet) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4* | 0 | 2.5 | | |
| Sample Type | Grab | Grab | Grab | Grab | Grab | | Grab | Grab | Grab | Composite | | |
| Description | Behind Test Pit B to SE | Behind Test Pit D to SE | Behind Test Pit F to SW | Behind Test Pit G to S | Behind Test Pit E to SE | Resampled at Ditch-5 | Behind TP-I to SE | *SW end, depth from top of initial berm | NE end of initial excavation | Resampled at NE area, expanded excavation | | |
| **Hydrocarbon Identification** | | | | | | | | | | | | |
| **Gasoline Range Organics** | U (21) | **Detected** | – | – | – | – | – | – | – | – | – | – |
| **Diesel Range Organics** | U (52) | U (54) | – | – | – | – | – | – | – | – | – | – |
| **Lube Oil Range Organics** | U (100) | **Detected** | – | – | – | – | – | – | – | – | – | – |
| **NWTPH-Gx (mg/kg)** | | | | | | | | | | | | |
| Gasoline Range | – | U (5.2) | U (6.4) | U (6.4) | U (10) | – | U (10) | U (10) | U (10) | – | 200 | 100 |
| **NWTPH-Dx (mg/kg)** | | | | | | | | | | | | |
| Diesel Range | – | U (27) | U (29) | U (28) | ND (50) | U (50) | U (50) | U (50) | U (50) | U (10) | 460 | 2,000 |
| Lube Oil Range | – | **260** | **81** | **170** | **504** | U (250) | U (250) | **253** | **3,100** | U (50) | 460 | 2,000 |
| **Volatile Organic Compounds (mg/kg)** | | | | | | | | | | | | |
| Methyl tert-Butyl Ether (MTBE) | – | U (0.001) | U (0.001) | U (0.001) | U (0.05) | U (0.039) | U (0.05) | U (0.05) | U (0.05) | – | – | – |
| Tert-butanol (TBA) | – | U (0.025) | U (0.031) | U (0.029) | U (0.02) | U (0.039) | U (0.02) | U (0.02) | U (0.02) | – | – | – |
| Ethyl-tert-Butyl Ether (ETBE) | – | U (0.0051) | U (0.0061) | U (0.0058) | U (0.10) | U (0.039) | U (0.10) | U (0.10) | U (0.10) | – | – | – |
| Tert-Amyl Methyl Ether (TAME) | – | U (0.0051) | U (0.0061) | U (0.0058) | U (0.02) | U (0.039) | U (0.02) | U (0.02) | U (0.02) | – | – | – |
| Benzene | – | U (0.001) | U (0.001) | U (0.001) | U (0.02) | U (0.039) | U (0.02) | U (0.02) | U (0.02) | – | – | 0.03 |
| Toluene | – | U (0.0051) | U (0.0061) | U (0.0058) | U (0.10) | U (0.039) | U (0.10) | U (0.10) | U (0.10) | – | – | 7 |
| Ethylbenzene | – | U (0.001) | U (0.001) | U (0.001) | U (0.05) | U (0.039) | U (0.05) | U (0.05) | U (0.05) | – | – | 6 |
| Total xylenes | – | U (0.002) | U (0.002) | U (0.002) | U (0.15) | U (0.039) | U (0.15) | U (0.15) | U (0.15) | – | – | 9 |
| Methylene chloride | – | U (0.0051) | U (0.0061) | **0.0073** | U (0.02) | U (0.029) | U (0.02) | U (0.02) | U (0.02) | – | – | 0.02 |
| **Polycyclic Aromatic Hydrocarbons (PAHs)(mg/kg)** | | | | | | | | | | | | |
| Naphthalene | – | U (0.007) | U (0.008) | U (0.008) | – | U (0.039) | U (0.042) | U (0.045) | – | U (0.004) | – | 5 |
| 2-Methylnaphthalene | – | U (0.007) | U (0.008) | U (0.008) | – | U (0.039) | U (0.042) | U (0.045) | – | – | – | 320[d] |
| 1-Methylnaphthalene | – | U (0.007) | U (0.008) | U (0.008) | – | U (0.039) | U (0.042) | U (0.045) | – | – | – | 34.5[d] |
| Benzo(a)anthracene | – | U (0.007) | U (0.008) | U (0.008) | – | U (0.039) | U (0.042) | U (0.045) | – | U (0.004) | – | 1.37[d] |
| Benzo(a)pyrene | – | U (0.007) | U (0.008) | U (0.008) | – | U (0.039) | U (0.042) | U (0.045) | – | U (0.004) | 30 | 0.1 |
| Benzo(b)fluoranthene | – | U (0.007) | U (0.008) | U (0.008) | – | U (0.039) | U (0.042) | U (0.045) | – | U (0.004) | – | 1.37[d] |
| Benzo(j,k)fluoranthene | – | U (0.007) | U (0.008) | U (0.008) | – | U (0.039) | U (0.042) | U (0.045) | – | U (0.004) | – | 13.7[d] |
| Chrysene | – | U (0.007) | **0.008** | U (0.008) | – | U (0.039) | U (0.042) | U (0.045) | – | U (0.004) | – | 137[d] |
| Dibenz(a,h)anthracene | – | U (0.007) | U (0.008) | U (0.008) | – | U (0.039) | U (0.042) | U (0.045) | – | U (0.004) | – | 0.137[d] |
| Indeno(1,2,3-cd)pyrene | – | U (0.007) | U (0.008) | U (0.008) | – | U (0.039) | U (0.042) | U (0.045) | – | U (0.004) | – | 1.37[d] |
| cPAHs (TEF)[a] | – | U (0.005) | **0.006** | U (0.006) | – | U (0.029) | U (0.032) | U (0.034) | – | U (0.003) | – | 0.1 |

SEE END OF TABLE FOR TABLE NOTES.

**Table 3 (continued). Summary of Soil Sampling Analytical Data from Test Pits, Ditches, and Excavations at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Parameter | Sample Identification | | | | | | | | | | Priority Contaminants of Ecological Concern[b] (mg/kg) | MTCA Method A for Unrestricted Land Use[c] (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Ditch-1-0** | **Ditch-2-0** | **Ditch-3-0** | **Ditch-4-0** | **Ditch-5-0** | **Ditch-5B-1** | **Ditch-6-0** | **Exc-E1-4** | **Exc-E2-0** | **Exc-E2C-2.5** | | |
| Date Collected | 6/27/19 | 6/27/19 | 6/27/19 | 6/27/19 | 7/23/19 | 7/26/19 | 7/23/19 | 7/23/19 | 7/23/19 | 8/2/19 | | |
| Sample Top Depth (feet) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4* | 0 | 2.5 | | |
| Sample Type | Grab | Grab | Grab | Grab | Grab | | Grab | Grab | Grab | Composite | | |
| Description | Behind Test Pit B to SE | Behind Test Pit D to SE | Behind Test Pit F to SW | Behind Test Pit G to S | Behind Test Pit E to SE | Resampled at Ditch-5 | Behind TP-I to SE | *SW end, depth from top of initial berm | NE end of initial excavation | Resampled at NE area, expanded excavation | | |
| **Polychlorinated Biphenyls (PCBs) (mg/kg)** | | | | | | | | | | | | |
| Total PCBs | – | U (0.054) | U (0.057) | U (0.057) | – | – | – | U (0.001) | – | – | 2 | 1 |
| **Total Metals** | | | | | | | | | | | | |
| Cadmium | U (0.52) | U (0.54) | U (0.57) | U (0.57) | – | ND (1.0) | ND (1.0) | ND (1.0) | – | U (0.3) | 220 | 250 |
| Chromium (total) | **15** | **22** | **18** | **21** | – | ND (5.0) | ND (5.0) | ND (5.0) | – | **15.6** | 42 | 2,000 |
| Chromium (hexavalent) | – | ND (1.1) | – | U (1.1) | – | – | – | – | – | **–** | – | 19 |
| Lead | U (5.2) | **6.6** | **19** | **15** | – | **10** | **29** | **90** | – | **7.2** | 220 | 250 |
| Nickel | **29** | **22** | **19** | **23** | – | **10.4** | **8.4** | **6.5** | – | **18.1** | 100 | 1,600[d] |
| Zinc | **28** | **35** | **51** | **52** | – | **7.9** | ND (5.0) | ND (5.0) | – | **28.2** | 270 | 24,000[d] |

SEE END OF TABLE FOR TABLE NOTES.

**Table 3 (continued). Summary of Soil Sampling Analytical Data from Test Pits, Ditches, and Excavations at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Parameter | Sample Identification | | | | | | | | | | Priority Contaminants of Ecological Concern[b] (mg/kg) | MTCA Method A for Unrestricted Land Use[c] (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Exc-E3C-1.5** | **Exc-E3C2-2** | **Exc-F1-0** | **Exc-F2-0** | **Exc-F2B-1.5** | **Exc-G1-1** | **Exc-G2-1** | **Exc-G2B-1** | **Exc-G3-2.5** | **Exc-G4-1** | | |
| Date Collected | 8/2/19 | 8/13/19 | 7/23/19 | 7/23/19 | 7/26/19 | 7/24/19 | 7/24/19 | 8/2/19 | 7/24/19 | 7/25/19 | | |
| Sample Top Depth (feet) | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2.5 | 1 | | |
| Sample Type | Composite | Composite | Grab | Grab | Grab | Grab | Grab | Grab | Grab | Grab | | |
| Description | NW area at expanded excavation | Resampled at NW area, expanded excavation | West bottom | East bottom | Resampled at Exc-F2 after additional excavation | West wall | SW wall | Resampled SW wall, after expanded excavation | West bottom | NW wall | | |
| **NWTPH-Gx (mg/kg)** | | | | | | | | | | | | |
| Gasoline Range | – | – | U (0.010) | U (0.010) | – | U (0.010) | U (0.010) | – | U (0.010) | U (0.010) | 200 | 100 |
| **NWTPH-Dx (mg/kg)** | | | | | | | | | | | | |
| Diesel Range | U (10) | U (10) | U (50) | U (50) | U (50) | U (50) | U (50) | U (10) | U (50) | U (50) | 460 | 2,000 |
| Lube Oil Range | **136** | U (50) | **439** | **1,090** | U (250) | U (250) | **1,360** | U (50) | U (250) | U (250) | 460 | 2,000 |
| **Volatile Organic Compounds (mg/kg)** | | | | | | | | | | | | |
| Methyl tert-Butyl Ether (MTBE) | – | – | U (0.05) | U (0.05) | – | U (0.05) | U (0.05) | – | U (0.05) | U (0.05) | – | – |
| Tert-butanol (TBA) | – | – | U (0.02) | U (0.02) | – | U (0.02) | U (0.02) | – | U (0.02) | U (0.02) | – | – |
| Ethyl-tert-Butyl Ether (ETBE) | – | – | U (0.10) | U (0.10) | – | U (0.10) | U (0.10) | – | U (0.10) | U (0.10) | – | – |
| Tert-Amyl Methyl Ether (TAME) | – | – | U (0.02) | U (0.02) | – | U (0.02) | U (0.02) | – | U (0.02) | U (0.02) | – | – |
| Benzene | – | – | U (0.02) | U (0.02) | – | U (0.02) | U (0.02) | – | U (0.02) | U (0.02) | – | 0.03 |
| Toluene | – | – | U (0.10) | U (0.10) | – | U (0.10) | U (0.10) | – | U (0.10) | U (0.10) | – | 7 |
| Ethylbenzene | – | – | U (0.05) | U (0.05) | – | U (0.05) | U (0.05) | – | U (0.05) | U (0.05) | – | 6 |
| Total xylenes | – | – | U (0.15) | U (0.15) | – | U (0.15) | U (0.15) | – | U (0.15) | U (0.15) | – | 9 |
| Methylene chloride | – | – | U (0.02) | U (0.02) | – | U (0.02) | U (0.02) | – | U (0.02) | U (0.02) | – | 0.02 |
| **Polycyclic Aromatic Hydrocarbons (PAHs)(mg/kg)** | | | | | | | | | | | | |
| Naphthalene | U (0.700) | U (0.036) | U (0.041) | – | U (0.043) | U (0.039) | – | U (0.004) | U (0.039) | U (0.042) | – | 5 |
| 2-Methylnaphthalene | U (0.700) | U (0.036) | U (0.041) | – | U (0.043) | U (0.039) | – | U (0.004) | U (0.039) | U (0.042) | – | 320[d] |
| 1-Methylnaphthalene | U (0.700) | U (0.036) | U (0.041) | – | U (0.043) | U (0.039) | – | U (0.004) | U (0.039) | U (0.042) | – | 34.5[d] |
| Benzo(a)anthracene | U (0.700) | U (0.036) | U (0.041) | – | U (0.043) | U (0.039) | – | U (0.004) | U (0.039) | U (0.042) | – | 1.37[d] |
| Benzo(a)pyrene | U (0.700) | U (0.036) | U (0.041) | – | U (0.043) | U (0.039) | – | U (0.004) | U (0.039) | U (0.042) | 30 | 0.1 |
| Benzo(b)fluoranthene | U (0.700) | U (0.036) | U (0.041) | – | U (0.043) | U (0.039) | – | U (0.004) | U (0.039) | U (0.042) | – | 1.37[d] |
| Benzo(j,k)fluoranthene | U (0.700) | U (0.036) | U (0.041) | – | U (0.043) | U (0.039) | – | U (0.004) | U (0.039) | U (0.042) | – | 13.7[d] |
| Chrysene | U (0.700) | U (0.036) | U (0.041) | – | U (0.043) | U (0.039) | – | U (0.004) | U (0.039) | U (0.042) | – | 137[d] |
| Dibenz(a,h)anthracene | U (0.700) | U (0.036) | U (0.041) | – | U (0.043) | U (0.039) | – | U (0.004) | U (0.039) | U (0.042) | – | 0.137[d] |
| Indeno(1,2,3-cd)pyrene | U (0.700) | U (0.036) | U (0.041) | – | U (0.043) | U (0.039) | – | U (0.004) | U (0.039) | U (0.042) | – | 1.37[d] |
| cPAHs (TEF)[a] | **U (0.529)** | U (0.027) | U (0.031) | – | U (0.032) | U (0.029) | – | U (0.003) | U (0.029) | U (0.031) | – | 0.1 |
| **Polychlorinated Biphenyls (PCBs) (mg/kg)** | | | | | | | | | | | | |
| Total PCBs | – | – | U (0.001) | – | U (0.1) | – | – | – | – | – | 2 | 1 |

SEE END OF TABLE FOR TABLE NOTES.

**Table 3 (continued). Summary of Soil Sampling Analytical Data from Test Pits, Ditches, and Excavations at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Parameter | Sample Identification | | | | | | | | | | Priority Contaminants of Ecological Concern[b] (mg/kg) | MTCA Method A for Unrestricted Land Use[c] (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Exc-E3C-1.5 | Exc-E3C2-2 | Exc-F1-0 | Exc-F2-0 | Exc-F2B-1.5 | Exc-G1-1 | Exc-G2-1 | Exc-G2B-1 | Exc-G3-2.5 | Exc-G4-1 | | |
| Date Collected | 8/2/19 | 8/13/19 | 7/23/19 | 7/23/19 | 7/26/19 | 7/24/19 | 7/24/19 | 8/2/19 | 7/24/19 | 7/25/19 | | |
| Sample Top Depth (feet) | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2.5 | 1 | | |
| Sample Type | Composite | Composite | Grab | Grab | Grab | Grab | Grab | Grab | Grab | Grab | | |
| Description | NW area at expanded excavation | Resampled at NW area, expanded excavation | West bottom | East bottom | Resampled at Exc-F2 after additional excavation | West wall | SW wall | Resampled SW wall, after expanded excavation | West bottom | NW wall | | |
| **Total Metals** | | | | | | | | | | | | |
| Cadmium | U (0.3) | U (0.3) | U (5.0) | – | U (5.0) | U (5.0) | – | U (0.3) | U (5.0) | U (5.0) | 220 | 250 |
| Chromium (total) | **9.2** | **13.8** | U (1.0) | – | U (1.0) | U (1.0) | – | **18.7** | U (1.0) | U (1.0) | 42 | 2,000 |
| Chromium (hexavalent) | – | – | – | – | – | – | – | – | – | – | – | 19 |
| Lead | **246** | U (2.5) | **133** | – | U (5.0) | **22** | – | **12.8** | U (5.0) | **13** | 220 | 250 |
| Nickel | **17.5** | **14.6** | **6.4** | – | **4.1** | **11.1** | – | **27.4** | **10.6** | **2.1** | 100 | 1,600[d] |
| Zinc | **67.7** | **23.6** | – | – | **9.3** | U (5.0) | – | **62.6** | U (5.0) | U (5.0) | 270 | 24,000[d] |
| **TCLP Lead (mg/L)** | – | – | **0.258** | – | – | – | – | – | – | – | NA | 5.0[e] |

SEE END OF TABLE FOR TABLE NOTES.

**Table 3 (continued). Summary of Soil Sampling Analytical Data from Test Pits, Ditches, and Excavations at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Parameter | Sample Identification | | | | | | | | | | | Priority Contaminants of Ecological Concern[b] (mg/kg) | MTCA Method A for Unrestricted Land Use[c] (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Exc-G5-1 | Exc-G6-2.5 | Exc-G6B-3 | Exc-G6B2-4 | Exc-G7-1 | Exc-G7B-1 | Exc-H1-1 | Exc-H1B-1.5 | Exc-H2-1 | Exc-H3-1 | Exc-H4-1 | | |
| Date Collected | 7/25/19 | 7/24/19 | 8/2/19 | 8/13/19 | 7/25/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | | |
| Sample Top Depth (feet) | 1 | 2.5 | 3 | 4 | 1 | 1 | 1 | 1.5 | 1 | 1 | 1 | | |
| Sample Type | Grab | Grab | Grab | Grab | Grab | Grab | Grab | Grab | Grab | Grab | Grab | | |
| Description | SW wall | East bottom | Resampled at Exc-G6 after additional excavation | Resampled at Exc-G6 after additional excavation | NE wall | Resampled at Exc-G7 after additional excavation | NW bench | Resampled at Exc-H1 after additional excavation | N middle bench | NE corner on bench | SE corner on bench | | |
| **NWTPH-Gx (mg/kg)** | | | | | | | | | | | | | |
| Gasoline Range | U (0.010) | U (0.010) | – | – | U (0.010) | U (0.010) | U (0.010) | – | U (0.010) | U (0.010) | – | 200 | 100 |
| **NWTPH-Dx (mg/kg)** | | | | | | | | | | | | | |
| Diesel Range | U (50) | U (50) | U (100) | U (50) | U (50) | U (50) | U (50) | U (50) | U (50) | U (50) | U (50) | 460 | 2,000 |
| Lube Oil Range | U (250) | **4,090** | **1,240** | U (250) | **726** | U (250) | **1,200** | U (250) | U (250) | U (250) | U (250) | 460 | 2,000 |
| **Volatile Organic Compounds (mg/kg)** | | | | | | | | | | | | | |
| Methyl tert-Butyl Ether (MTBE) | U (0.05) | U (0.05) | – | – | U (0.05) | U (0.05) | U (0.05) | – | U (0.05) | U (0.05) | – | | |
| Tert-butanol (TBA) | U (0.02) | U (0.02) | – | – | U (0.02) | U (0.02) | U (0.02) | – | U (0.02) | U (0.02) | – | – | – |
| Ethyl-tert-Butyl Ether (ETBE) | U (0.10) | U (0.10) | – | – | U (0.10) | U (0.10) | U (0.10) | – | U (0.10) | U (0.10) | – | – | – |
| Tert-Amyl Methyl Ether (TAME) | U (0.02) | U (0.02) | – | – | U (0.02) | U (0.02) | U (0.02) | – | U (0.02) | U (0.02) | – | – | – |
| Benzene | U (0.02) | U (0.02) | – | – | U (0.02) | U (0.02) | U (0.02) | – | U (0.02) | U (0.02) | – | – | 0.03 |
| Toluene | U (0.10) | U (0.10) | – | – | U (0.10) | U (0.10) | U (0.10) | – | U (0.10) | U (0.10) | – | – | 7 |
| Ethylbenzene | U (0.05) | U (0.05) | – | – | U (0.05) | U (0.05) | U (0.05) | – | U (0.05) | U (0.05) | – | – | 6 |
| Total xylenes | U (0.15) | U (0.15) | – | – | U (0.15) | U (0.15) | U (0.15) | – | U (0.15) | U (0.15) | – | – | 9 |
| Methylene chloride | U (0.02) | U (0.02) | – | – | U (0.02) | U (0.02) | U (0.02) | – | U (0.02) | U (0.02) | – | – | 0.02 |
| **Polycyclic Aromatic Hydrocarbons (PAHs)(mg/kg)** | | | | | | | | | | | | | |
| Naphthalene | U (0.040) | – | U (0.700) | U (0.036) | U (0.041) | U (0.041) | – | U (0.042) | U (0.037) | U (0.040) | U (0.036) | – | 5 |
| 2-Methylnaphthalene | U (0.040) | – | U (0.700) | U (0.036) | U (0.041) | U (0.041) | – | U (0.042) | U (0.037) | U (0.040) | U (0.036) | – | 320[d] |
| 1-Methylnaphthalene | U (0.040) | – | U (0.700) | U (0.036) | U (0.041) | U (0.041) | – | U (0.042) | U (0.037) | U (0.040) | U (0.036) | – | 34.5[d] |
| Benzo(a)anthracene | U (0.040) | – | U (0.700) | U (0.036) | U (0.041) | U (0.041) | – | U (0.042) | U (0.037) | U (0.040) | U (0.036) | – | 1.37[d] |
| Benzo(a)pyrene | U (0.040) | – | U (0.700) | U (0.036) | U (0.041) | U (0.041) | – | U (0.042) | U (0.037) | U (0.040) | U (0.036) | 30 | 0.1 |
| Benzo(b)fluoranthene | U (0.040) | – | U (0.700) | U (0.036) | U (0.041) | U (0.041) | – | U (0.042) | U (0.037) | U (0.040) | U (0.036) | – | 1.37[d] |
| Benzo(j,k)fluoranthene | U (0.040) | – | U (0.700) | U (0.036) | U (0.041) | U (0.041) | – | U (0.042) | U (0.037) | U (0.040) | U (0.036) | – | 13.7[d] |
| Chrysene | U (0.040) | – | U (0.700) | U (0.036) | U (0.041) | U (0.041) | – | U (0.042) | U (0.037) | U (0.040) | U (0.036) | – | 137[d] |
| Dibenz(a,h)anthracene | U (0.040) | – | U (0.700) | U (0.036) | U (0.041) | U (0.041) | – | U (0.042) | U (0.037) | U (0.040) | U (0.036) | – | 0.137[d] |
| Indeno(1,2,3-cd)pyrene | U (0.040) | – | U (0.700) | U (0.036) | U (0.041) | U (0.041) | – | U (0.042) | U (0.037) | U (0.040) | U (0.036) | – | 1.37[d] |
| cPAHs (TEF)[a] | U (0.030) | – | **U (0.529)** | U (0.027) | U (0.031) | U (0.031) | – | U (0.032) | U (0.028) | U (0.030) | U (0.027) | – | 0.1 |
| **Polychlorinated Biphenyls (PCBs) (mg/kg)** | | | | | | | | | | | | | |
| Total PCBs | – | – | – | – | – | – | – | – | – | – | – | 2 | 1 |

SEE END OF TABLE FOR TABLE NOTES.

**Table 3 (continued). Summary of Soil Sampling Analytical Data from Test Pits, Ditches, and Excavations at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Parameter | Sample Identification | | | | | | | | | | | Priority Contaminants of Ecological Concern[b] (mg/kg) | MTCA Method A for Unrestricted Land Use[c] (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Exc-G5-1 | Exc-G6-2.5 | Exc-G6B-3 | Exc-G6B2-4 | Exc-G7-1 | Exc-G7B-1 | Exc-H1-1 | Exc-H1B-1.5 | Exc-H2-1 | Exc-H3-1 | Exc-H4-1 | | |
| Date Collected | 7/25/19 | 7/24/19 | 8/2/19 | 8/13/19 | 7/25/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | | |
| Sample Top Depth (feet) | 1 | 2.5 | 3 | 4 | 1 | 1 | 1 | 1.5 | 1 | 1 | 1 | | |
| Sample Type | Grab | Grab | Grab | Grab | Grab | Grab | Grab | Grab | Grab | Grab | Grab | | |
| Description | SW wall | East bottom | Resampled at Exc-G6 after additional excavation | Resampled at Exc-G6 after additional excavation | NE wall | Resampled at Exc-G7 after additional excavation | NW bench | Resampled at Exc-H1 after additional excavation | N middle bench | NE corner on bench | SE corner on bench | | |
| **Total Metals** | | | | | | | | | | | | | |
| Cadmium | U (5.0) | – | **0.4** | U (0.3) | – | U (5.0) | – | U (5.0) | U (5.0) | U (5.0) | U (5.0) | 220 | 250 |
| Chromium (total) | U (1.0) | – | **41** | **13.1** | – | U (1.0) | – | U (1.0) | U (1.0) | **8.9** | U (1.0) | 42 | 2,000 |
| Chromium (hexavalent) | – | – | – | – | – | – | – | – | – | – | – | – | 19 |
| Lead | **149** | – | **194** | **36.4** | – | U (5.0) | – | U (5.0) | U (5.0) | **78** | U (5.0) | 220 | 250 |
| Nickel | **15.8** | – | **19.3** | **12.1** | – | **14.4** | – | **14.4** | **8.8** | **9.7** | **11.5** | 100 | 1,600[d] |
| Zinc | **7.0** | – | **51** | **40.2** | – | **10** | – | **12** | **13** | **9.0** | **13** | 270 | 24,000[d] |
| **TCLP Lead (mg/L)** | **0.901** | – | – | – | – | – | – | – | – | – | – | NA | 5.0[e] |

SEE END OF TABLE FOR TABLE NOTES.

**Table 3 (continued). Summary of Soil Sampling Analytical Data from Test Pits, Ditches, and Excavations at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Parameter | Sample Identification | | | | | | | | | | Priority Contaminants of Ecological Concern[b] (mg/kg) | MTCA Method A for Unrestricted Land Use[c] (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Exc-H5A-5 | Exc-H5B-5 | Exc-H5C-5 | Exc-H6-6 | Exc-H7-8 | Exc-H8C-5 | Exc-H8C2-5 | Exc-H9C-5 | Exc-H10-2 | Exc-H11-1 | | |
| Date Collected | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 8/2/19 | 8/12/19 | 8/2/19 | 8/2/19 | 8/2/19 | | |
| Sample Top Depth (feet) | 5 | 5 | 5 | 6 | 8 | 5 | 5 | 5 | 2 | 2 | | |
| Sample Type | Grab | Grab | Composite | Grab | Grab | Composite | Composite | Composite | Grab | Grab | | |
| Description | N wall for Gx and volatiles | N wall for Gx and volatiles | N wall composite of H5A and H5B | East bottom | West bottom | SE wall | SE wall at Exc-H8C after additional excavation | SW walls | SE bench after trees removed | South bench after loadout area excavated | | |
| **NWTPH-Gx (mg/kg)** | | | | | | | | | | | | |
| Gasoline Range | U (0.010) | U (0.010) | – | – | – | – | – | – | – | – | 200 | 100 |
| **NWTPH-Dx (mg/kg)** | | | | | | | | | | | | |
| Diesel Range | – | – | U (50) | U (50) | U (50) | U (100) | U (10) | U (10) | U (10) | U (10) | 460 | 2,000 |
| Lube Oil Range | – | – | **256** | U (250) | U (250) | **2,610** | U (50) | **75.4** | U (50) | U (50) | 460 | 2,000 |
| **Volatile Organic Compounds (mg/kg)** | | | | | | | | | | | | |
| tert-Butyl Alcohol (TBA) | – | – | – | U (0.05) | U (0.05) | – | – | – | – | – | – | – |
| tert-Butyl Ethyl Ether (ETBE) | – | – | – | U (0.02) | U (0.02) | – | – | – | – | – | – | – |
| tert-Amyl Methyl Ether (TAME) | – | – | – | U (0.10) | U (0.10) | – | – | – | – | – | – | – |
| Benzene | – | – | – | U (0.02) | U (0.02) | – | – | – | – | – | – | 0.03 |
| Toluene | – | – | – | U (0.02) | U (0.02) | – | – | – | – | – | – | 7 |
| Ethylbenzene | – | – | – | U (0.10) | U (0.10) | – | – | – | – | – | – | 6 |
| Total xylenes | – | – | – | U (0.05) | U (0.05) | – | – | – | – | – | – | 9 |
| Methylene chloride | – | – | – | U (0.15) | U (0.15) | – | – | – | – | – | – | 0.02 |
| **Polycyclic Aromatic Hydrocarbons (PAHs)(mg/kg)** | | | | | | | | | | | | |
| Naphthalene | – | – | U (0.038) | U (0.044) | U (0.042) | U (0.700) | U (0.036) | U (0.004) | U (0.004) | U (0.004) | – | 5 |
| 2-Methylnaphthalene | – | – | U (0.038) | U (0.044) | U (0.042) | U (0.700) | U (0.036) | U (0.004) | U (0.004) | U (0.004) | – | 320[d] |
| 1-Methylnaphthalene | – | – | U (0.038) | U (0.044) | U (0.042) | U (0.700) | U (0.036) | U (0.004) | U (0.004) | U (0.004) | – | 34.5[d] |
| Benzo(a)anthracene | – | – | U (0.038) | U (0.044) | U (0.042) | U (0.700) | U (0.036) | U (0.004) | U (0.004) | U (0.004) | – | 1.37[d] |
| Benzo(a)pyrene | – | – | U (0.038) | U (0.044) | U (0.042) | U (0.700) | U (0.036) | U (0.004) | U (0.004) | U (0.004) | 30 | 0.1 |
| Benzo(b)fluoranthene | – | – | U (0.038) | U (0.044) | U (0.042) | U (0.700) | U (0.036) | U (0.004) | U (0.004) | U (0.004) | – | 1.37[d] |
| Benzo(j,k)fluoranthene | – | – | U (0.038) | U (0.044) | U (0.042) | U (0.700) | U (0.036) | U (0.004) | U (0.004) | U (0.004) | – | 13.7[d] |
| Chrysene | – | – | U (0.038) | U (0.044) | U (0.042) | U (0.700) | U (0.036) | U (0.004) | U (0.004) | U (0.004) | – | 137[d] |
| Dibenz(a,h)anthracene | – | – | U (0.038) | U (0.044) | U (0.042) | U (0.700) | U (0.036) | U (0.004) | U (0.004) | U (0.004) | – | 0.137[d] |
| Indeno(1,2,3-cd)pyrene | – | – | U (0.038) | U (0.044) | U (0.042) | U (0.700) | U (0.036) | U (0.004) | U (0.004) | U (0.004) | – | 1.37[d] |
| cPAHs (TEF)[a] | – | – | U (0.029) | U (0.033) | U (0.032) | **U (0.529)** | U (0.027) | U (0.003) | U (0.003) | U (0.003) | – | 0.1 |
| **Polychlorinated Biphenyls (PCBs) (mg/kg)** | | | | | | | | | | | | |
| Total PCBs | – | – | U (0.1) | – | – | – | – | U (0.01) | – | – | 2 | 1 |

SEE END OF TABLE FOR TABLE NOTES.

**Table 3 (continued). Summary of Soil Sampling Analytical Data from Test Pits, Ditches, and Excavations at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Parameter | Sample Identification | | | | | | | | | | Priority Contaminants of Ecological Concern[b] (mg/kg) | MTCA Method A for Unrestricted Land Use[c] (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Exc-H5A-5 | Exc-H5B-5 | Exc-H5C-5 | Exc-H6-6 | Exc-H7-8 | Exc-H8C-5 | Exc-H8C2-5 | Exc-H9C-5 | Exc-H10-2 | Exc-H11-1 | | |
| Date Collected | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 8/2/19 | 8/12/19 | 8/2/19 | 8/2/19 | 8/2/19 | | |
| Sample Top Depth (feet) | 5 | 5 | 5 | 6 | 8 | 5 | 5 | 5 | 2 | 2 | | |
| Sample Type | Grab | Grab | Composite | Grab | Grab | Composite | Composite | Composite | Grab | Grab | | |
| Description | N wall for Gx and volatiles | N wall for Gx and volatiles | N wall composite of H5A and H5B | East bottom | West bottom | SE wall | SE wall at Exc-H8C after additional excavation | SW walls | SE bench after trees removed | South bench after loadout area excavated | | |
| **Total Metals** | | | | | | | | | | | | |
| Cadmium | – | – | U (1.0) | U (1.0) | U (1.0) | U (0.3) | U (0.3) | U (0.3) | U (0.3) | U (0.3) | 220 | 250 |
| Chromium (total) | – | – | **12** | **7.4** | **7.0** | **17.4** | **17.8** | **11.3** | **13.4** | **11.4** | 42 | 2,000 |
| Chromium (hexavalent) | – | – | – | – | – | – | – | – | – | – | – | 19 |
| Lead | – | – | **42** | **6.7** | U (5.0) | **86** | U (2.5) | **15.6** | U (2.5) | **9.0** | 220 | 250 |
| Nickel | – | – | **10.6** | **13.7** | **10.7** | **24.3** | **20.8** | **18.9** | **24.8** | **18.1** | 100 | 1,600[d] |
| Zinc | – | – | **6.8** | **15** | **14** | **154** | **31.3** | **42.8** | **37.4** | **30.3** | 270 | 24,000[d] |

SEE END OF TABLE FOR TABLE NOTES.

**Table 3 (continued). Summary of Soil Sampling Analytical Data from Test Pits, Ditches, and Excavations at the 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Parameter | Sample Identification | | | | | | | | Priority Contaminants of Ecological Concern[b] (mg/kg) | MTCA Method A for Unrestricted Land Use[c] (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| | TP9-TCLP-5 | EXC-E-SP1 | EXC-E-SP2 | TP-G-3 | TP-H-3 | EXC-F-SP1 | Exc-H/TP9-Comp | Exc-F-Comp | | |
| Date Collected | 7/22/19 | 7/23/19 | 7/23/19 | 7/23/19 | 7/23/19 | 7/23/19 | 7/30/19 | 7/30/19 | | |
| Sample Top Depth (feet) | 5 | NA | NA | NA | NA | NA | NA | NA | | |
| Sample Type | Composite | Composite | Composite | Composite | Composite | Composite | Composite | Composite | | |
| Description | At 5 feet deep to characterize soil for disposal | From stockpile to characterize soil for disposal | From stockpile to characterize soil for disposal | From berm to characterize soil for disposal | From berm to characterize soil for disposal | From west end of berm to characterize soil for disposal | From nearly completed excavation | From completed excavation | | |
| **TCLP Lead (mg/L)** | **5.95** | **0.104** | **0.585** | **1.36** | **2.98** | **5.30** | **0.073** | U (0.025) | NA | 5.0[e] |

Orange highlighted sample identification boxes indicate samples that exceeded the Ecological cleanup level or MTCA Method A cleanup level for unrestricted land use for one or more parameters.

Green highlighted sample identification boxes indicate samples that did not exceed the Ecological cleanup level or MTCA Method A cleanup level for any parameters.

**BOLD values** detected above the reporting limit.

**Shaded values** exceeded MTCA Table 749-2 ecological screening level and/or MTCA Method A or Method B CUL for unrestricted land use.

[a] Total cPAHs toxicity equivalency factor (TEF) was calculated using 1/2 the reporting limit for compounds that were not detected above the reporting limit.

[b] Table 749-2: Priority Contaminants of Ecological Concern for Sites that Qualify for the Simplified Terrestrial Ecological Evaluation Procedure. MTCA Chapter 173-340 WAC.

[c] Table 740-1: Method A Soil Cleanup Levels for Unrestricted Land Use. MTCA Chapter 173-340 WAC.

[d] MTCA Method B Cleanup Level

[e] Maximum Concentration of Lead for the Toxicity Characteristic above which the contaminant must be designated Dangerous Waste per WAC 173-303-090.

– = Not analyzed or not applicable.

cPAHs = Carcinogenic polycyclic aromatic hydrocarbons.

mg/kg = Milligrams per kilogram.

U = Not detected above laboratory reporting limits shown in parentheses.

A data quality assurance review was completed by Herrera for all analyses performed. Data quality assurance review memorandums are included in Appendix H. Data were validated based on the following:

- Sample custody, preservation, holding times, and completeness
- Laboratory reporting limits
- Method blank analysis
- Laboratory control sample analysis
- Surrogate compound analysis
- Matrix spike analysis
- Laboratory duplicate analysis

## 3.3.2. Geology and Hydrology

### *3.3.2.1. Geology*

The project area is located on a broad glacial recessional outwash plain that formed by melt water streams as the continental glaciers ablated about 13,000 years ago. In the project vicinity, the surficial geology has been mapped as Steilacoom Gravel (Brown and Caldwell et al. 1985). Steilacoom Gravel is a locally specific type of recessional outwash deposit composed of coarse gravel with interstitial sand. This unit was deposited by high-energy streams and rivers that rapidly drained a large proglacial lake that occupied the Puyallup River valley. The rivers cut massive outwash channels and spread the gravels out over portions of southern and western Pierce County. The recessional outwash deposits are generally underlain at depth by Vashon glacial till deposited beneath the continental glaciers as they advanced into the Puget Sound area. The low hills rising above the outwash plain are remnants of the topography that was higher in elevation than the recessional outwash surface. These low hills have been mapped as glacial drumlins composed mostly of glacial till.

Soils are mapped as Spanaway gravelly-sandy loam, composed of well drained to excessively well drained sands and gravels across the top 5 feet. The soils have high infiltration rates, high hydraulic conductivity, and low water holding capacity.

Three monitoring wells were installed in July and August 2019, completed to a total depth of 51 feet bgs. Geology observed during the well installation included weathered recessional outwash to a depth of approximately 3 to 4 feet bgs, underlain by unweathered recessional outwash to 51 feet; till was not observed in the borings. Soils encountered in the borings

generally included fine to large gravel with sand, silt, and cobbles, and sandy fine to large gravel with cobbles, trace silt. A distinct change in texture to sandy, fine to medium gravel was observed near the top of the water bearing zone around 40 feet bgs.

#### 3.3.2.2. Hydrology

The Site is relatively level with surface water either infiltrating where precipitation falls or collecting in drainage ditches to infiltrate behind the north and west soil berms (Figure 3).

Groundwater in the site vicinity is reported as generally 30 feet bgs or deeper in the shallow aquifer, flowing to the north-northwest (Brown and Caldwell et al. 1985; USGS 2010). Well logs within 0.25 mile of the site indicate shallow groundwater found near 36 feet bgs (Ecology 2019). Groundwater flow in the deep aquifer is generally toward the west northwest; with groundwater measured at over 200 feet bgs.

Groundwater was encountered in MW-1 through MW-3 during installation at depths near 40 feet bgs. On August 5, 2019, static water levels measured in the three monitoring wells MW-1, MW-2, and MW-3, ranged from 37.70 to 38.86 feet bgs. Groundwater contour maps for sampling conducted on August 5 and November 1, 2019, are provided in Figure 5 and Figure 6, respectively.

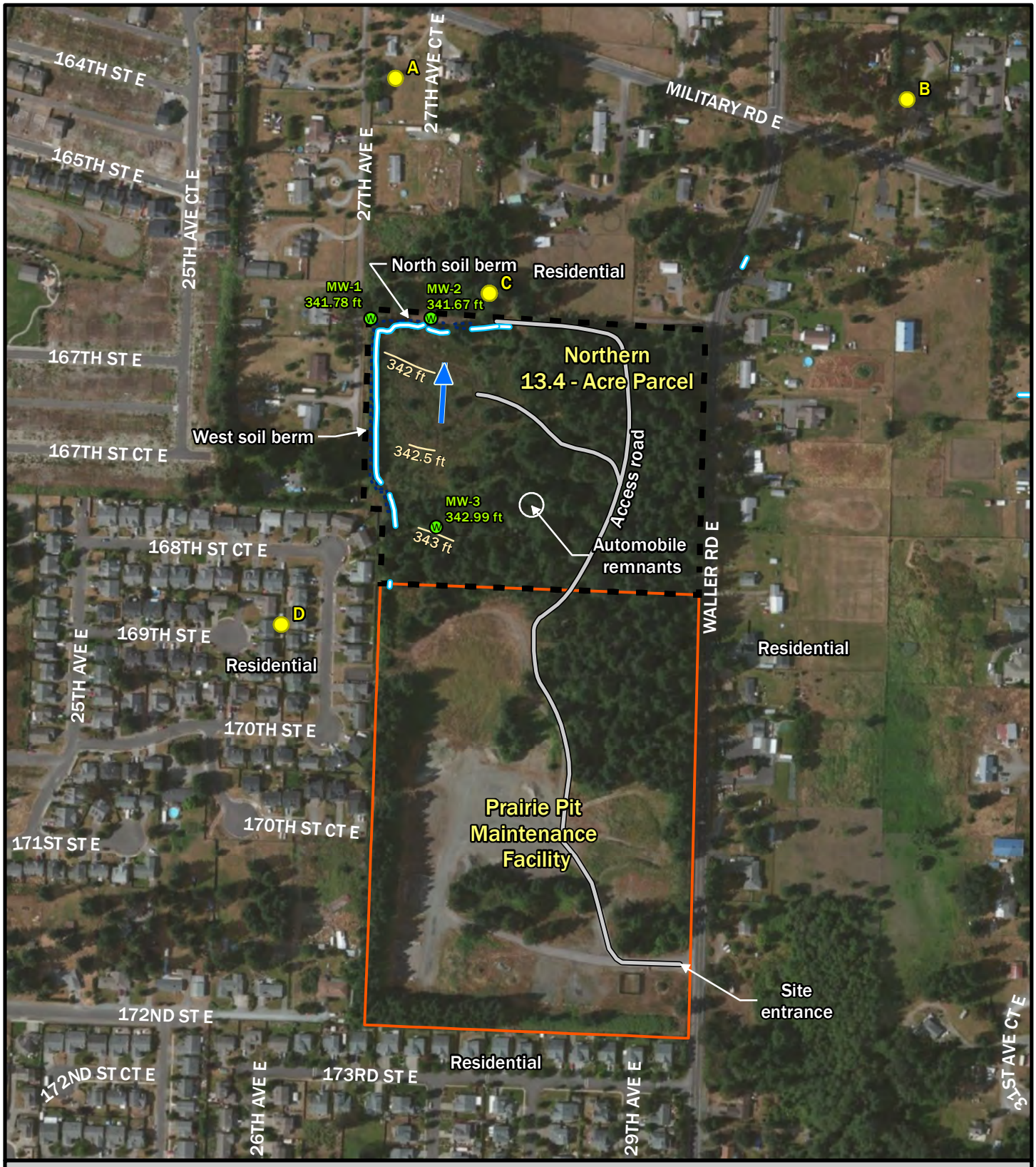
Information regarding the locations of residential drinking water supply wells located in the vicinity of the Site was reviewed on Ecology's Washington State Well Report Viewer website. The following wells were identified and are depicted as wells A through D on Figure 2 and well logs are provided in Appendix I:

- Well A (Schumacher) appears to be located downgradient to the north of the Site, but the address listed on the well log (16004 38th Avenue East) indicates that the well is located approximately 2,700 feet northeast of where it is shown on Ecology's mapping tool and Figure 2.

- Well B (Ryan Communities) is listed as abandoned and appears to be located to the northeast of the Site. However, the address listed on the well log indicates that the well is located approximately 1,300 feet east of where it is shown on Ecology's mapping tool and Figure 2.

- Well C (Milton) appears to be located adjacent to the north of the Site, but the address listed on the well log (3109 176th Street East) indicates that the well is located approximately 1,300 feet southeast of where it is shown on Ecology's mapping tool and Figure 2.

- Well D (Crest Builders) is located approximately 250 feet east of the Site at the same location as the address listed on the well log (172 East 27th Avenue.).




## Legend

- Private water supply well
- Monitoring well
- Parcel 0319262074 being sold
- Parcel 0319263091
- Soil berm
- Groundwater contour
- Ditch
- Access road
- Groundwater flow direction

Notes: The plotted locations of private water supply wells are not consistent with the listed addresses (see the Hydrology section of the Site Closure Report for more information).

**Figure 5.**
**Groundwater Contour Map, August 5, 2019, 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

N

0 125 250 500 Feet

HERRERA

Digital Globe, Aerial

K:\Projects\Y2016\16-06310-011\Project\Report\Fig5_PrairiePit_GWContours_Aug5_20190930.mxd

## Legend

- Private water supply well
- Monitoring well
- Parcel 0319262074 being sold
- Parcel 0319263091
- Soil berm
- Groundwater contour
- Ditch
- Access road
- Groundwater flow direction

Notes: The plotted locations of private water supply wells are not consistent with the listed addresses (see the Hydrology section of the Site Closure Report for more information).

**Figure 6.**
**Groundwater Contour Map, November 1, 2019, 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

N

0 125 250 500 Feet

HERRERA

Digital Globe, Aerial

K:\Projects\Y2016\16-06310-011\Project\Report\Fig6_PrairiePit_GWContours_20191108.mxd

A fifth well (Ben Wade property) is depicted on Ecology's website on the south-central portion of the Prairie Pit Maintenance Facility. However, the site address listed on the well log (17016 32nd Avenue East) indicates that the well is located over 500 feet southeast of the property boundary. To avoid confusion and the appearance that there is a drinking water well on the County's maintenance facility, this well is not depicted on Figure 2 of this Site Closure Report.

#### 3.3.2.3. Soil Analytical Results

A summary of soil sampling results is presented in Table 3 and summarized below for samples collected from test pits, ditches, and remedial excavations.

##### Test Pits

The following analytical results were obtained for soil samples from test pits:

- Gasoline-range petroleum hydrocarbons were identified in three of nine test pit samples and diesel-range petroleum hydrocarbons were identified in two of nine samples via HCID analysis; however, neither parameter was detected in follow-up analysis by Methods NWTPH-Gx and NWTPH-Dx.

- No VOCs were detected in any of the samples analyzed.

- Lube oil was detected in six of nine samples at concentrations ranging from 250 to 8,500 mg/kg. At Test Pit E and Test Pit F the concentrations of lube oil exceeded the ecological SSL of 460 mg/kg, but soils exceeding the SSL at these locations were removed during remedial activities and clean confirmation samples were collected.

- cPAHs were detected in five of nine samples, but none of the concentrations of individual cPAHs exceeded the ecological SSL or MTCA Method A or B CUL. At Test Pit F the concentration of total cPAHs exceeded the MTCA Method A CUL of 0.1 mg/kg, but soils exceeding the CUL at that location were removed during remedial activities and a clean confirmation sample was collected.

- Total PCBs were detected in one of seven samples at a concentration of 0.66 mg/kg, below the ecological SSL and MTCA Method A CUL of 1.0 mg/kg.

- Lead was detected in six of eight samples at concentrations ranging from 12 to 3,600 mg/kg. At Test Pit E and Test Pit F the concentrations of lead exceeded the ecological SSL of 220 mg/kg, and soils at Test Pit F also exceeded the Dangerous Waste limit for total lead of 5.0 mg/L. Soils at these locations exceeding the ecological SSL for lead were removed during remedial activities, and clean confirmation samples were collected; soils from Excavation F were disposed as Dangerous Waste.

- Hexavalent chromium was not detected in the three samples that were analyzed.

## Ditches

- Gasoline- and diesel-range petroleum hydrocarbons were identified in one of two ditch samples via HCID analysis; however, neither parameter was detected in follow-up analysis by Methods NWTPH-Gx and NWTPH-Dx.

- One VOC, methylene chloride was detected in one sample at a concentration of 0.0073 mg/kg, well below the MTCA Method A cleanup level of 0.02 mg/kg.

- Lube oil was detected in four of seven samples at concentrations ranging from 81 to 504 mg/kg. At the Ditch-5 sample location, the concentration of lube oil exceeded the ecological SSL of 460 mg/kg, but soils exceeding the SSL at this location were removed during remedial activities and a clean confirmation sample was collected.

- Chrysene was detected in one sample at a concentration of 0.007 mg/kg, but well below the MTCA Method B CUL of 137 mg/kg, and the total cPAH concentration of 0.006 mg/kg was also below the MTCA Method A CUL of 0.1 mg/kg.

- PCBs were not detected in any of the ditch samples.

- Total metals detected in ditch samples included total chromium (in four samples ranging from 15 to 22 mg/kg), lead (in five samples ranging from 6.6 to 29 mg/kg), nickel (in six samples ranging from 8.4 to 29 mg/kg), and zinc (in five samples ranging from 7.9 to 52 mg/kg); none of the concentrations exceeded the ecological SSLs or MTCA Method A or B CULs. Hexavalent chromium was not detected in the two samples that were analyzed.

## Excavations

- No gasoline- or diesel-range petroleum hydrocarbons, VOCs, or PCBs were detected in any of the 34 samples collected from the remedial excavations.

- Lube oil was detected in 13 of 34 samples at concentrations ranging from 75.4 to 4,090 mg/kg. At each location where the concentration of lube oil exceeded the ecological SSL of 460 mg/kg, additional soils were removed during remedial activities and clean confirmation samples were collected.

- Because of elevated reporting limits due to interference from lube oil, the concentration of total cPAHs of 0.529 mg/kg calculated for 3 of 27 samples, exceeded the MTCA Method A CUL of 0.1 mg/kg. At each of these locations where the CUL was exceeded, additional soils were removed during remedial activities and clean confirmation samples were collected.

- PCBs were not detected in any of the excavation samples.

- Total metals detected in excavation samples included cadmium (in 1 sample at a concentration of 0.4 mg/kg), total chromium (in 15 samples ranging from 7.4 to 41 mg/kg), lead (in 16 samples ranging from 6.7 to 246 mg/kg), nickel (in 26 samples ranging from 2.1 to 27.4 mg/kg), and zinc (in 21 samples ranging from 9.3 to 154 mg/kg); none of the concentrations exceeded the ecological SSLs or MTCA Method A or B CULs. No samples were analyzed for hexavalent chromium.

- The concentration of TCLP lead detected in samples from the TP-9 source area and from Excavation F exceeded the Dangerous Waste limit for total lead of 5.0 mg/L; therefore, soils from both those areas were disposed as Dangerous Waste.

#### 3.3.2.4. Groundwater Analytical Results

A summary of groundwater sampling analytical results is presented in Table 4.

None of the parameters analyzed during the August 5, 2019, sampling event were detected in samples from the three monitoring wells above the laboratory reporting limits except for total metals including chromium, lead, and zinc detected in MW-1. The concentrations of these three total metals were all below the respective MTCA Method A or B cleanup levels. It is assumed that the detection of metals above the reporting limits in the August 5 sample can be attributed to slight turbidity observed in the sample as it was collected.

None of the parameters analyzed during the November 1, 2019, sampling event were detected in any of the three monitoring wells above the laboratory reporting limits.

**Table 4. Summary of Groundwater Sampling Analytical Results, August and November 2019, 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

| Parameter | MW-1 | | MW-2 | | MW-3 | | MTCA Method A Cleanup Level |
|---|---|---|---|---|---|---|---|
| **Date** | **8/5/19** | **11/1/19** | **8/5/19** | **11/1/19** | **8/5/19** | **11/1/19** | |
| **NWTPH-G (µg/L)** | ND (100) | ND (100) | ND (100) | ND (100) | ND (100) | ND (100) | 1,000 |
| **NWTPH-Dx (mg/L)** | | | | | | | |
| Diesel Range Organics | ND (0.29) | ND (0.21) | ND (0.26) | ND (0.21) | ND (0.25) | ND (0.20) | 0.5 |
| Lube Oil | ND (0.46) | ND (0.21) | ND (0.41) | ND (0.21) | ND (0.40) | ND (0.20) | 0.5 |
| **VOCs (µg/L)** | ND (PQLs vary) | | ND (PQLs vary) | | ND (PQLs vary) | | Varies |
| **Metals (µg/L)** | | | | | | | |
| Total Cadmium | ND (4.4) | ND (4.4) | ND (4.4) | ND (4.4) | ND (4.4) | ND (4.4) | 5.0 |
| Dissolved Cadmium | ND (4.0) | ND (4.0) | ND (4.0) | ND (4.0) | ND (4.0) | ND (4.0) | 5.0 |
| Total Chromium | **22** | ND (11) | ND (11) | ND (11) | ND (11) | ND (11) | 50 |
| Dissolved Chromium | ND (10) | ND (10) | ND (10) | ND (10) | ND (10) | ND (10) | 50 |
| Total Lead | **4.6** | ND (1.1) | ND (1.1) | ND (1.1) | ND (1.1) | ND (1.1) | 15 |
| Dissolved Lead | ND (1.0) | ND (1.0) | ND (1.0) | ND (1.0) | ND (1.0) | ND (1.0) | 15 |
| Total Nickel | ND (22) | ND (22) | ND (22) | ND (22) | ND (22) | ND (22) | 320[a] |
| Dissolved Nickel | ND (20) | ND (20) | ND (20) | ND (20) | ND (20) | ND (20) | 320[a] |
| Total Zinc | **40** | ND (28) | ND (28) | ND (28) | ND (28) | ND (28) | 4,800[a] |
| Dissolved Zinc | ND (25) | ND (25) | ND (25) | ND (25) | ND (25) | ND (25) | 4,800[a] |
| **Ethylene dibromide (µg/L)** | ND (0.0096) | – | ND (0.0096) | – | ND (0.0097) | – | 0.01 |
| **Tert-Amyl Methyl Ether (TAME) (µg/L)** | ND (1.0) | – | ND (1.0) | – | ND (1.0) | – | – |
| **Total cPAHs (µg/L)** | ND (0.011) | ND (0.010) | ND (0.010) | ND (0.010) | ND (0.011) | ND (0.010) | 0.1 |
| **Total PCBs** | ND (0.054) | – | ND (0.051) | – | ND (0.050) | – | 0.1 |

[a] MTCA Method B Cleanup Level.

**BOLD values** detected above the reporting limit.
NWTPH = Northwest total petroleum hydrocarbons
NWTPH-G = Gasoline range
NWTPH-Dx = Diesel range extended Ito include heavy oil)
VOCs = Volatile organic compounds
cPAHs = Carcinogenic polycyclic aromatic hydrocarbons
mg/L = Milligrams per liter
µg/L = Micrograms per liter
MTCA = Model Toxics Control Act
ND = Not detected above laboratory reporting limits shown in parentheses
– = Not analyzed or not applicable.

# 4. CONCEPTUAL SITE MODEL

One primary source of contamination, soils impacted by waste oil, was identified in a soil berm along the north end of the Site. Soils observed at the Site from the ground surface down include:

- Dark brown-black silty sand with gravel ranging from 2.5 to 8 feet thick (considered native soil, or fill with varied amounts of debris including petroleum-contaminated soils where pushed into berms or deposited into the TP-9 source area).

- A few feet of tan gravel with sand, silt, and cobbles (weathered recessional outwash) underlying the surface soils, followed by several feet of light-gray gravel with varying amounts of sand, cobbles, and silt (unweathered recessional outwash).

Groundwater has been detected at depths ranging from 37 to 40 feet bgs in three monitoring wells installed at the Site in 2019. Groundwater was not detected in any of the excavations during soil removal activities and no Chemicals of Concern (COCs) were detected above MTCA Method A or B CULs during the August 5, and November 1, 2019, sampling events.

Potential secondary release mechanisms at the Site could include the following:

- Dust and/or volatile emissions

- Infiltration/percolation

- Stormwater runoff

Dust and volatile emissions were eliminated from consideration because the berms where soil contamination was present were densely vegetated, no VOCs were detected in any of the soil samples analyzed, and the contaminant source appears to be waste oil that typically does not release VOCs.

The remedial excavations were shallow and ranged in depth from approximately 1 to 9 feet bgs. Based on observations of soils in excavations during the remedial activities, the thick viscous nature of waste oil, and confirmation sampling of soils on the excavation bottoms, it appears that infiltration/percolation at the Site has not caused contaminants to migrate into soils deeper than the depths explored in the remedial excavations.

Based on soil samples collected from ditches located in topographic low spots directly behind the soil berms, it does not appear that stormwater runoff has caused contaminants from the soil berms to migrate. Besides the ditches, there are no other stormwater conveyance features present on site.

There is no surface water on the Site, and no COCs were detected above MTCA Method A or B CULs in groundwater samples collected from three newly installed monitoring wells, thus eliminating these two exposure pathways. The soil and air pathways are also considered incomplete, based on soil sampling results. There are no potential health, environmental, or other impacts from the COCs remaining at the site.

# 5. CLEANUP STANDARDS

## 5.1. SELECTED SOIL CLEANUP LEVELS

For this Site, MTCA Method A cleanup levels for unrestricted land use were used, with some exceptions. For compounds with more restrictive criteria than MTCA Method A or B cleanup levels for unrestricted land use, listed below, chemical concentration numbers listed in Table 749-2 (WAC 173-340-900) were used as cleanup levels for the Site:

- Diesel Range Organics – A cleanup level of 460 milligram per kilogram (mg/kg)
- Total lead – A cleanup level of 220 mg/kg
- Total chromium – A cleanup level of 42 mg/kg

## 5.2. CLEANUP STANDARDS FOR OTHER MEDIA

Not applicable—no other contaminated media besides soil have been identified at the site.

## 5.3. TERRESTRIAL ECOLOGICAL EVALUATION

The site was evaluated by a Herrera biologist for the potential to pose a threat to terrestrial ecological receptors. Supporting documentation for the TEE is provided in Appendix B. To qualify for exclusion from a TEE, the site must meet one of the four criteria included in WAC 173-340-7491(1). The site does not meet any of the exclusion criteria based on the following:

- The impacted soil is located below the point of compliance (site surface extending to 15 feet bgs.
- An institutional control is not present to maintain a physical barrier that prevents potential ecological exposure.
- There are more than 1.5 acres of contiguous undeveloped land within 500 feet of the site.
- Concentrations in the soil are not below natural background levels.

Because the site does not quality for exclusion from a TEE under subsection (1) of WAC 173-340-7491, further evaluation for the potential threat to terrestrial ecological receptors is required under subsection (2). Model Toxics Control Act (MTCA) regulations (WAC 173-340-7491(2)) allow a simplified TEE if all the following criteria apply:

1. The site is not located on, or directly adjacent to, an area where management of land use plans will maintain or restore native or semi-native vegetation.

2. The site is not used by threatened or endangered species.

3. This site is located on a property that contains less than 10 acres of native vegetation within 500 feet of the site, not including vegetation beyond the property boundaries.

4. The department determines that the site does not present a risk to significant wildlife population.

Each of the above criteria were evaluated, and the site was found to qualify for a simplified evaluation, as described below (see Appendix B for supporting documentation):

*Criterion 1*: The site is not within a designated critical area.

*Criterion 2*: Washington Department of Fish and Wildlife's (WDFW) Priority Habitat Species (PHS) mapping tool indicated that no threated or endangered species use the site.

*Criterion 3*: Less than 10 acres of native vegetation is located on the property within 500 feet of the contaminated soils at the Site. Approximately 6.2 acres of native vegetation are located within 500 feet of the Site and approximately 3.1 acres of the Site is dominated by nonnative European Scotch Broom (*Cytisis scoparius*).

*Criterion 4*: It is assumed that Ecology will determine that the site does not present a risk to a significant wildlife population.

The simplified TEE was completed for the site as required in WAC 173-340-7492.

Per WAC 173-340-7492(2)(c)(i), the Site met the criteria to end the evaluation based on exposure analysis, pathway analysis, and contaminant analysis. After remediation, no contaminants listed in Table 749-2 are present in soils at concentrations that exceed the cleanup levels listed.

# 6. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

## 6.1. SUMMARY AND CONCLUSIONS

The Site has been adequately characterized and successfully remediated in compliance with Chapter 173-340 WAC. The remedial action removed all contamination to levels below the ecological screening levels and/or MTCA Method A or B cleanup levels for unrestricted land use.

### 6.1.1. Test Pits

A total of nine test pits were initially completed at the Site during the Limited Phase II ESA completed in May 2019 (S&W). Contaminated soils were not identified at TP-1 through TP-8.

At TP-9, petroleum-impacted soils and miscellaneous debris were encountered in fill soils to a depth of 8 feet bgs. Elevated concentrations of lube oil, heavy metals (cadmium and lead), and cPAHs were detected above the MTCA Method A cleanup levels in samples from 2.5 feet and 8 feet bgs. In Addition, the concentration of lead detected in the 2.5-foot deep sample exceeded the Dangerous Waste limit of 5 mg/L for TCLP lead.

Previous investigations observed abandoned automobile remnants near TP-4. Those remnants were removed on July 23, and no COCs were detected in soils at that location above the ecological SSLs or MTCA Method A or B CULs.

An additional 11 test pit explorations were completed in June 2019, including 9 test pits along the north and west soil berms, and a tenth "clean" test pit behind (e.g., south of) the north soil berm. At TP-A through TP-D, miscellaneous household debris including plastic, metal, ceramic, concrete, rope, and similar items were observed in four test pits completed along the west berm. However, no petroleum-stained soils, odors, or other signs of contamination were observed and concentrations of COCs detected were below the Site SSLs and CULs.

At TP-E, miscellaneous household debris was observed, and at TP-F through TP-I, metal debris, rubber hose, and other items were observed along with petroleum staining resembling waste oil and strong petroleum odors. Laboratory analysis of a samples from TP-E and TP-F confirmed elevated concentrations of lube oil, lead, and cPAHs above the Site SSLs and CULs.

### 6.1.2. Ditches

Surface soil samples were collected from a total of six locations in ditches. An elevated concentration of lube oil was detected at the Ditch 5 sample location directly behind TP-E. No elevated concentrations of COCs above Site SSLs or CULs were detected at any of the other five ditch sample locations.

### 6.1.3. Remedial Excavations

A total of four remedial excavations, Excavation E through Excavation H were completed at the Site; Excavation H included the former TP-9 source area that was investigated by Shannon & Wilson. Remedial activities were initiated at the Site on July 22 and completed on August 13. At each excavation, soils were visually screened and loaded directly into a truck and trailer or stockpiled on plastic sheeting, and initial soil confirmation samples were collected. Where COCs were detected in soil samples above Site SSLs or CULs, additional soils were removed, and the area(s) resampled until no COCs were detected above Site SSLs or CULs in any of the final confirmation samples from all four excavations.

A total of 242.49 tons of soils designated as Dangerous Waste were disposed at Chemical Waste Management in Arlington, Oregon, and 759.28 tons of soils designated as PCS were disposed at LRI in Puyallup, Washington.

### 6.1.4. Groundwater

During the August 5, 2019, sampling event, only three total metals (chromium, lead, and zinc) were detected above the laboratory reporting limits in a sample from one well (MW-1); however, the metals concentrations were all below the respective MTCA Method A or B cleanup levels. No petroleum hydrocarbons, fuel additives, or cPAHs were detected in samples from any of the wells. During the November 1, 2019, sampling event, none of the parameters analyzed were detected above the laboratory reporting limits in any of the three wells.

## 6.2. RECOMMENDATIONS

One additional round of quarterly groundwater sampling is planned in February 2019 to further assess groundwater conditions at the Site. Pending the results of that sampling event and based on the additional site characterization activities and remedial actions completed to date, an unrestricted NFA is warranted for this Site.

# 7. REFERENCES


Brown and Caldwell. 1985. Final Report Clover/Chambers Creek Geohydrologic Study for Tacoma-Pierce County Health Department. July.

Ecology. 1994. Natural Background Soil Metals Concentrations in Washington State, Publication No. 94-115, Published by the Washington State Department of Ecology, Olympia, Washington.

Ecology. 2013. Model Toxics Control Act Regulation and Statute—Model Toxics Control Act, Chapter 70.105D RCW; Uniform Environmental Covenants Act, Chapter 64.70 RCW; and MTCA Cleanup Regulation, Chapter 173-340 WAC. Washington State Department of Ecology, Toxics Cleanup Program. Publication Number 94-06. Revised 2013.

Pierce County. 2014. Determination of Non-Significance, Environmental Application No. 770376, Reclamation Plan for Prairie Pit. Prepared by Pierce County, Tacoma, Washington. February 25.

Pierce County. 2019. Pierce County Tax Assessor-Treasurer, tax parcel Information for parcel number 0319262004. Accessed viewed October 14, 2019. <https://epip.co.pierce.wa.us/CFApps/atr/ePIP/search.cfm>.

Rudolph, Jeff, Environmental Biologist III, Pierce County Planning and Public Works. Personal communication: interview with George Iftner, Herrera Environmental Consultants, Inc., and Jeff Rudolph, regarding historical placement of street sweepings on the southern half of the property. June 25, 2019.

S&W. 2019. Limited Phase II Environmental Site Assessment, Approximate 13.4 acres – Waller Road, Frederickson, Washington. Prepared for Bethel School District, Spanaway, Washington by Shannon & Wilson, Seattle, Washington. May 2.

Sitts & Hill. 2019. Monitoring Wells Location Exhibit over topographic survey. Prepared for Pierce County Planning and Public Works by Sitts & Hill Engineers, Inc., Tacoma, Washington. August 7.

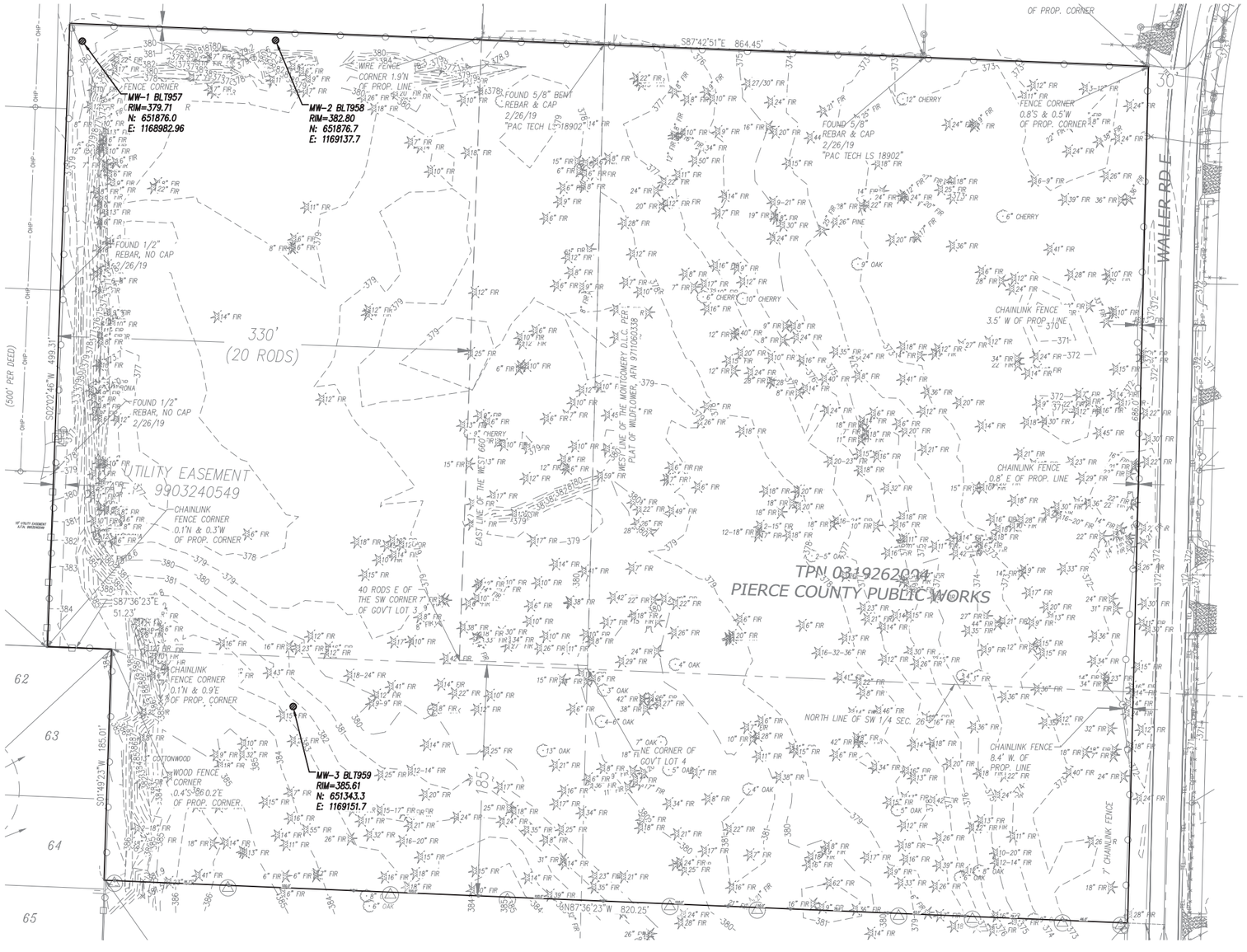
USGS. 2010. Hydrogeologic Framework, Groundwater Movement, and Water Budget in the Chambers-Clover Creek Watershed and Vicinity, Pierce County, Washington. Prepared by the US Geological Survey in cooperation with the Pierce Conservation District and the Washington State Department of Ecology.

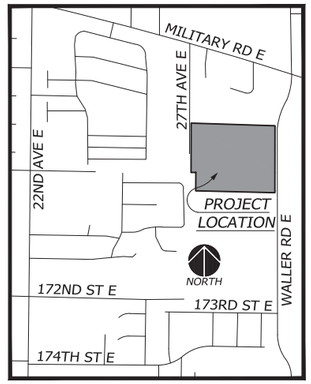
# APPENDIX A

## Monitoring Well Location Exhibit and Topographic Survey

# MONITORING WELLS LOCATION EXHIBIT

A PORTION OF THE NE 1/4 OF THE SW 1/4 & THE SE 1/4 OF THE NW 1/4 OF SECTION 26, TOWNSHIP 19 NORTH, RANGE 3 EAST, W.M., PIERCE COUNTY, WASHINGTON




VICINITY MAP

NOT TO SCALE

NORTH

HORIZONTAL SCALE: 1"=50'

50 0 50 100

## LEGEND

- FOUND MONUMENT AS NOTED
- WA DEPT OF ECOLOGY UNIQUE WELL
- FOUND PROPERTY CORNER AS NOTED
- SURVEY CONTROL POINT, AS NOTED
- STORM CULVERT
- UTILITY POLE
- GUY ANCHOR
- JUNCTION BOX
- POWER TRANSFORMER
- TELEPHONE RISER
- TELEPHONE JUNCTION BOX
- SIGN
- MAILBOX
- TPN TAX PARCEL NUMBER
- TREE

- BOUNDARY LINE
- LOT LINE
- SECTION LINE
- RIGHT OF WAY LINE
- ROAD CENTERLINE
- OHP — OVERHEAD POWER LINE
- TEL — TEL — BURIED TELECOMMUNICATIONS LINE
- DITCH LINE
- CHAIN LINK FENCE
- WOOD FENCE
- WIRE FENCE
- ASPHALT SURFACE
- CONCRETE SURFACE
- GRAVEL SURFACE

## HORIZONTAL DATUM

WASHINGTON STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83/2011
BASED ON GPS OBSERVATION UTILIZING THE WASHINGTON STATE REFERENCE NETWORK (WSRN)

MEASURED NORTH 01°23'58" EAST BETWEEN TWO FOUND MONUMENTS ALONG WALLER ROAD EAST AS SHOWN

## VERTICAL DATUM

NAVD 88
BASED ON GPS OBSERVATION UTILIZING THE WSRN WITH NGS GEOID2012B LOADED

TEMPORARY BENCHMARK ELEVATION = 373.26
DESCRIPTION: 3" SURFACE BRASS W/PUNCH ON WALLER ROAD EAST NEAR THE NORTHEAST SITE CORNER

## NOTES

1. THE PURPOSE OF THIS SURVEY EXHIBIT IS TO ILLUSTRATE THE LOCATION OF THE 3 MONITORING WELLS INSTALLED UNDER HERRERA DIRECTION AND TO PROVIDE THE ASSOCIATED MEASURED DATA FOR EACH. SEE THE MONITORING WELL TABLE SHOWN HEREON.
2. ELEVATIONS FOR THE MONITORING WELL DATA ARE BASED ON FIELD MEASUREMENTS COMPLETED WITH DIFFERENTIAL LEVELING.
3. EQUIPMENT USED: TOPCON QS AND/OR CARLSON CR2+ ROBOTIC TOTAL STATION AND TOPCON GR3 RTK/GPS
4. THIS SURVEY WAS PERFORMED BY FIELD TRAVERSE WITH THE FINAL RESULTS MEETING OR EXCEEDING THE CURRENT TRAVERSE STANDARDS CONTAINED IN W.A.C. 332-130-090. ALL MEASUREMENTS WERE MADE WITH A TOPCON QS ROBOTIC TOTAL STATION IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S SPECIFICATIONS.
5. IN ACCORDANCE WITH THE REVISED CODE OF WASHINGTON (R.C.W.) 58.09 AND THE WASHINGTON ADMINISTRATIVE CODE (W.A.C.) 332-130, THIS SURVEY MAY DEPICT OCCUPATIONAL INDICATORS THAT DIFFER FROM THE DEEDED LOT LINES. THESE INDICATORS, IF AT ALL PRESENT, MAY REPRESENT A POTENTIAL FOR CLAIMS OF UNWRITTEN TITLE. THIS SURVEY DOES NOT PURPORT TO RESOLVE SUCH ITEMS.
6. FIELD WORK PERFORMED IN MARCH AND AUGUST 2019, UNDER SITTS & HILL JOB NUMBER 18234 AND 18497.
7. UTILITIES AS SHOWN HEREON ARE BASED ON FIELD SURVEY OBSERVATION OF UTILITY LOCATE SERVICES PERFORMED BY MT. VIEW LOCATING SERVICES LLC IN FEBRUARY FOR THIS SURVEY. THIS HAS BEEN SUPPLEMENTED BY RECORD INFORMATION OBTAINED FROM PIERCE COUNTY GIS. RECORD UTILITY LINES SHOWN HEREON ARE DEPICTED WITH A DASHED LINETYPE AS SHOWN IN THE LEGEND. UTILITIES OTHER THAN SHOWN MAY EXIST ON THE SITE. THE SURVEYOR DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE SURVEYOR DOES CERTIFY THAT THEY ARE SHOWN AS ACCURATELY AS POSSIBLE FROM FIELD SURVEY AND PAINTED UTILITY LOCATE LINES. COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA IS CONSISTENT WITH QUALITY LEVEL B OF THE ASCE STANDARD GUIDELINES 38-02.
8. SITTS & HILL ENGINEERS, INC. HAS RELIED UPON TITLE INFORMATION NOTED IN COMMITMENT FOR TITLE INSURANCE PREPARED BY CHICAGO TITLE INSURANCE COMPANY, COMMITMENT NUMBER 0126698-TC, DATED JUNE 6, 2018. SITTS & HILL ENGINEERS, INC. HAS RELIED WHOLLY ON SAID TITLE COMPANY'S REPORT AND THEREFORE QUALIFIES THE MAP'S ACCURACY AND COMPLETENESS TO THAT EXTENT.
9. THIS SURVEY COMPLIES WITH W.A.C. 332-130-145. THE CONTOURS DEPICTED HEREON ARE BASED ON DATA FROM DIRECT FIELD MEASUREMENTS. THE TOPOGRAPHIC MAPPING DATA ILLUSTRATED HEREON IS INTENDED TO PROVIDE BACKGROUND AND REFERENCE INFORMATION FOR THIS EXHIBIT. ORIGINAL COMPLETE BOUNDARY AND TOPOGRAPHIC MAPPING WAS COMPLETED FOR BETHEL SCHOOL DISTRICT. REFER TO SITTS & HILL PROJECT NUMBER 18234 FOR ADDITIONAL INFORMATION.

| MONITORING WELL DATA – 08/05/2019 | | | | | | |
|---|---|---|---|---|---|---|
| POINT | DESCRIPTION | RIM ELEVATION | TOP OF PVC CASING ELEVATION | ADJACENT GROUND ELEVATION | NORTHING | EASTING |
| MW-1 | BLT 957 | 379.71 | 379.50 | 379.48 | 651876.0 | 1168983.0 |
| MW-2 | BLT 958 | 382.80 | 382.33 | 379.39 | 651876.7 | 1169137.7 |
| MW-3 | BLT 959 | 385.61 | 384.97 | 381.85 | 651343.3 | 1169151.7 |

REVISIONS

APPROVALS

DESIGNED --
DRAWN DMG
CHECKED MAM
DATE 08-07-2019
SCALE AS NOTED

SEAL

PRELIMINARY

PREPARED BY

SITTS & HILL ENGINEERS, INC.
CIVIL ▪ STRUCTURAL ▪ SURVEYING
4815 CENTER STREET | TACOMA, WA 98409
PHONE: (253) 474-9449 | FAX: (253) 474-0163
http://www.sittshill.com/

PREPARED FOR

HERRERA INC.
2200 – 6TH AVE. STE. 1100
SEATTLE, WA 98121
ATTN: GEORGE IFTNER

PROJECT
PRAIRIE PIT SITE
WALLER ROAD
PIERCE COUNTY, WA

SHEET TITLE
MONITORING WELLS LOCATION EXHIBIT

SHEET NO.
1 OF 1

PROJECT NO.
18497

O:\18300\18234\Drawings\18234 - Monitoring Well Exhibit.dwg last edited 08/07/19 1:32pm by: sshilling

# APPENDIX B

# Terrestrial Ecological Evaluation Documentation

# Voluntary Cleanup Program

**Washington State Department of Ecology**
**Toxics Cleanup Program**

# TERRESTRIAL ECOLOGICAL EVALUATION FORM

Under the Model Toxics Control Act (MTCA), a terrestrial ecological evaluation is necessary if hazardous substances are released into the soils at a Site. In the event of such a release, you must take one of the following three actions as part of your investigation and cleanup of the Site:

1. Document an exclusion from further evaluation using the criteria in WAC 173-340-7491.
2. Conduct a simplified evaluation as set forth in WAC 173-340-7492.
3. Conduct a site-specific evaluation as set forth in WAC 173-340-7493.

When requesting a written opinion under the Voluntary Cleanup Program (VCP), you must complete this form and submit it to the Department of Ecology (Ecology). The form documents the type and results of your evaluation.

***Completion of this form is not sufficient to document your evaluation. You still need to document your analysis and the basis for your conclusion in your cleanup plan or report.***

If you have questions about how to conduct a terrestrial ecological evaluation, please contact the Ecology site manager assigned to your Site. For additional guidance, please refer to https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Terrestrial-ecological-evaluation.

| **Step 1: IDENTIFY HAZARDOUS WASTE SITE** | |
|---|---|
| Please identify below the hazardous waste site for which you are documenting an evaluation. | |
| Facility/Site Name: 13.4-Acre Undeveloped Parcel | |
| Facility/Site Address: 16720 Waller Road East, Tacoma, Pierce County, WA 98446-1336 | |
| Facility/Site No.: 40178 | VCP Project No.: SW1684 |

| **Step 2: IDENTIFY EVALUATOR** | | | |
|---|---|---|---|
| Please identify below the person who conducted the evaluation and their contact information. | | | |
| Name: Josh LeClerc | | | Title: Project Biologist |
| Organization: Herrera Environmental Consultants | | | |
| Mailing address: 2200 Sixth Avenue, Suite 1100 | | | |
| City: Seattle | | State: WA | Zip code: 98121 |
| Phone: 206-787-8303 | Fax: | E-mail: jleclerc@herrerainc.com | |

## Step 3: DOCUMENT EVALUATION TYPE AND RESULTS

### A. Exclusion from further evaluation.

**1. Does the Site qualify for an exclusion from further evaluation?**

☐ Yes *If you answered **"YES,"** then answer **Question 2**.*

☒ No or Unknown *If you answered **"NO" or "UNKNOWN,"** then skip to **Step 3B** of this form.*

**2. What is the basis for the exclusion?** *Check all that apply. Then skip to **Step 4** of this form.*

Point of Compliance: WAC 173-340-7491(1)(a)

☐ All soil contamination is, or will be,* at least 15 feet below the surface.

☐ All soil contamination is, or will be,* at least 6 feet below the surface (or alternative depth if approved by Ecology), and institutional controls are used to manage remaining contamination.

Barriers to Exposure: WAC 173-340-7491(1)(b)

☐ All contaminated soil, is or will be,* covered by physical barriers (such as buildings or paved roads) that prevent exposure to plants and wildlife, and institutional controls are used to manage remaining contamination.

Undeveloped Land: WAC 173-340-7491(1)(c)

☐ There is less than 0.25 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site and any of the following chemicals is present: chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.

☐ For sites not containing any of the chemicals mentioned above, there is less than 1.5 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site.

Background Concentrations: WAC 173-340-7491(1)(d)

☐ Concentrations of hazardous substances in soil do not exceed natural background levels as described in WAC 173-340-200 and 173-340-709.

* An exclusion based on future land use must have a completion date for future development that is acceptable to Ecology.

[±] "Undeveloped land" is land that is not covered by building, roads, paved areas, or other barriers that would prevent wildlife from feeding on plants, earthworms, insects, or other food in or on the soil.

[#] "Contiguous" undeveloped land is an area of undeveloped land that is not divided into smaller areas of highways, extensive paving, or similar structures that are likely to reduce the potential use of the overall area by wildlife.

**B. Simplified evaluation.**

**1. Does the Site qualify for a simplified evaluation?**

☒ Yes *If you answered **"YES,"** then answer **Question 2** below.*

☐ No or Unknown *If you answered **"NO"** or **"UNKNOWN,"** then skip to **Step 3C** of this form.*

**2. Did you conduct a simplified evaluation?**

☒ Yes *If you answered **"YES,"** then answer **Question 3** below.*

☐ No *If you answered **"NO,"** then skip to **Step 3C** of this form.*

**3. Was further evaluation necessary?**

☐ Yes *If you answered **"YES,"** then answer **Question 4** below.*

☒ No *If you answered **"NO,"** then answer **Question 5** below.*

**4. If further evaluation was necessary, what did you do?**

☐ Used the concentrations listed in Table 749-2 as cleanup levels. *If so, then skip to **Step 4** of this form.*

☐ Conducted a site-specific evaluation. *If so, then skip to **Step 3C** of this form.*

**5. If no further evaluation was necessary, what was the reason?** *Check all that apply. Then skip to **Step 4** of this form.*

Exposure Analysis: WAC 173-340-7492(2)(a)

☒ Area of soil contamination at the Site is not more than 350 square feet.

☐ Current or planned land use makes wildlife exposure unlikely. Used Table 749-1.

Pathway Analysis: WAC 173-340-7492(2)(b)

☒ No potential exposure pathways from soil contamination to ecological receptors.

Contaminant Analysis: WAC 173-340-7492(2)(c)

☒ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations that exceed the values listed in Table 749-2.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations that exceed the values listed in Table 749-2, and institutional controls are used to manage remaining contamination.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays, and institutional controls are used to manage remaining contamination.

**C. Site-specific evaluation.** A site-specific evaluation process consists of two parts: (1) formulating the problem, and (2) selecting the methods for addressing the identified problem. Both steps require consultation with and approval by Ecology. *See* WAC 173-340-7493(1)(c).

**1. Was there a problem?** *See* WAC 173-340-7493(2).

☐ Yes *If you answered **"YES,"** then answer **Question 2** below.*

☐ No *If you answered **"NO,"** then identify the reason here and then skip to **Question 5** below:*

- ☐ No issues were identified during the problem formulation step.
- ☐ While issues were identified, those issues were addressed by the cleanup actions for protecting human health.

**2. What did you do to resolve the problem?** *See* WAC 173-340-7493(3).

- ☐ Used the concentrations listed in Table 749-3 as cleanup levels. *If so, then skip to **Question 5** below.*
- ☐ Used one or more of the methods listed in WAC 173-340-7493(3) to evaluate and address the identified problem. *If so, then answer **Questions 3 and 4** below.*

**3. If you conducted further site-specific evaluations, what methods did you use?**
*Check all that apply. See* WAC 173-340-7493(3).

- ☐ Literature surveys.
- ☐ Soil bioassays.
- ☐ Wildlife exposure model.
- ☐ Biomarkers.
- ☐ Site-specific field studies.
- ☐ Weight of evidence.
- ☐ Other methods approved by Ecology. If so, please specify:

**4. What was the result of those evaluations?**

- ☐ Confirmed there was no problem.
- ☐ Confirmed there was a problem and established site-specific cleanup levels.

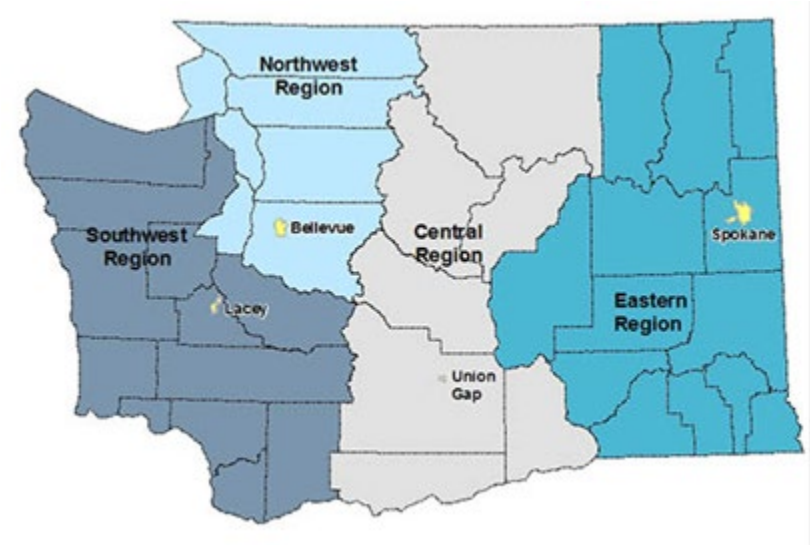
**5. Have you already obtained Ecology's approval of both your problem formulation and problem resolution steps?**

☐ Yes If so, please identify the Ecology staff who approved those steps:

☐ No

## Step 4: SUBMITTAL

Please mail your completed form to the Ecology site manager assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.




| | |
|---|---|
| **Northwest Region:**<br>Attn: VCP Coordinator<br>3190 160th Ave. SE<br>Bellevue, WA 98008-5452 | **Central Region:**<br>Attn: VCP Coordinator<br>1250 West Alder St.<br>Union Gap, WA 98903-0009 |
| **Southwest Region:**<br>Attn: VCP Coordinator<br>P.O. Box 47775<br>Olympia, WA 98504-7775 | **Eastern Region:**<br>Attn: VCP Coordinator<br>N. 4601 Monroe<br>Spokane WA 99205-1295 |

If you need this publication in an alternate format, please call the Toxics Cleanup Program at 360-407-7170. People with hearing loss can call 711 for Washington Relay Service. People with a speech disability can call 877-833-6341.

# Bald eagles in Washington

## Recent Changes to Bald Eagle Management Planning

The recovery of the bald eagle is a major success story for our state and the entire nation. After 30 years of steady population growth, the iconic bird was removed from the federal endangered species list in 2007, then from the state's list in 2017. Scientists attribute the species' dramatic recovery to a variety of conservation measures, notably the federal ban on DDT.

Now that bald eagle populations have rebounded, many of the special safeguards designed to protect them are no longer necessary. Since 2011, when the Washington Fish and Wildlife Commission changed the species' status from "threatened" to "sensitive," many of the state's special protective measures for bald eagles have been eliminated.

Today, the U.S. Fish and Wildlife Service (USFWS) has the primary responsibility for managing bald eagles under the provisions of the federal Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Current federal guidelines for activities that may affect bald eagles are posted on the USFWS website: *http://www.fws.gov/pacific/eagle/* .

WDFW no longer actively maintains bald eagle nest or roost data, nor distributes it through our Priority Habitat and Species data. For additional information about what WDFW does and does not provide please visit our web site at: *https://wdfw.wa.gov/species-habitats/at-risk/species-recovery/bald-eagle.*

## Legend

- Private water supply well
- Monitoring well (Herrera 2019)
- Test pit (Shannon & Wilson 2019)
- Parcel 0319262074 being sold
- Parcel 0319263091
- Soil berm
- Ditch
- Access road

Notes: The plotted locations of private water supply wells are not consistent with the listed addresses (see the Hydrology section of the Site Closure Report for more information).

**Figure B-1. Site Map of 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

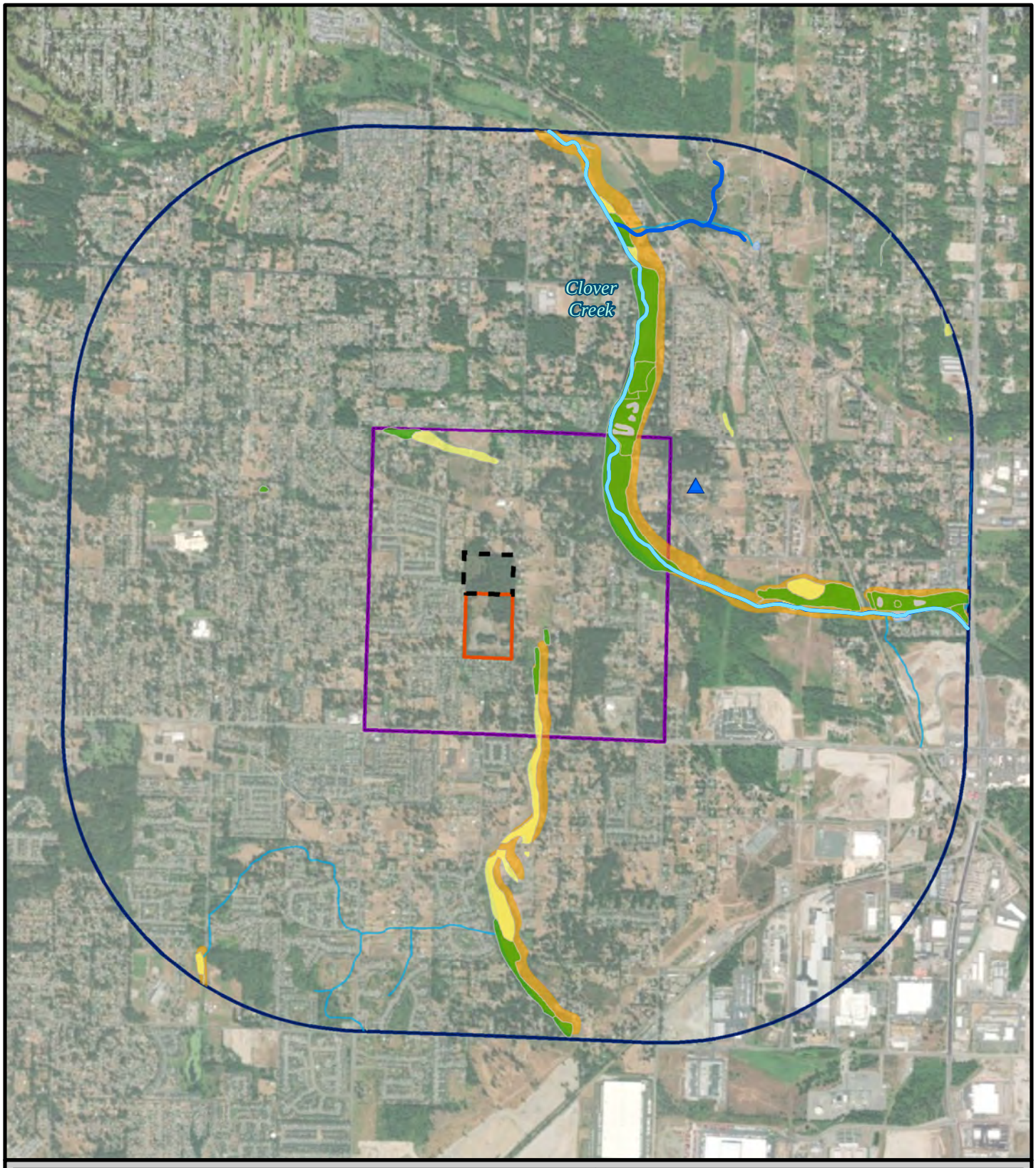
N

0 175 350 700 Feet

HERRERA

Digital Globe, Aerial (2017)

K:\Projects\Y2016\16-06310-011\Project\Report\Fig2_SiteMap_letter.mxd




Legend

- Parcel 0319262074 being sold
- Parcel 0319263091
- Area of interest
- Band-tailed pigeon
- Salmonid Stock Inventory
- WA Fish Distribution
- PHS boundary
- PHS wetland

NWI Wetlands

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

**Figure B-2.**
**Priority Habitat and Species (PHS) Data for 13.4-Acre Undeveloped Parcel, Pierce County, Washington.**

N

0 1,200 2,400 4,800 Feet

HERRERA

DigitalGlobe, Aerial (2017)

K:\Projects\Y2016\16-06310-011\Project\Report\FigX_PrairiePitSoil_PHS_Data_20190830.mxd

# APPENDIX C

# Photographic Documentation

# 13.4-Acre Undeveloped Parcel Site Remediation: Photographic Log

| Photo Number | Photo Description |
|---|---|
| 1 | Initial site conditions facing west along north berm, west of Shannon & Wilson Test Pit 9 (TP-9). |
| 2 | Initial site conditions at TP-9. |
| 3 | Ditch 1 sample location behind west berm, near Test Pit B. |
| 4 | Ditch 2 sample location behind west berm, near Test Pit D. |
| 5 | Ditch 3 sample location behind north berm, near Test Pit F. |
| 6 | Ditch 4 sample location behind north berm, near Test Pit G. |
| 7 | Ditch 5 sample location behind berm, near Test Pit E; after additional excavation and resampling. |
| 8 | Ditch 6 sample location behind berm, near Test Pits I and J. |
| 9 | Test Pit A soils. |
| 10 | Test Pit A debris (black plastic seedling trays, glass, porcelain, brick, tin can, metal screen edging, plastic bags, steel threaded rod, and concrete). |
| 11 | Test Pit B soils. |
| 12 | Test Pit B debris (small concrete fragments in upper 2 feet – almost completely free of debris). |
| 13 | Test Pit C location. |
| 14 | Test Pit C soils. |
| 15 | Test Pit C debris (black plastic seedling trays, Bayer aspirin bottle, glass milk bottle, and ceramic plate). |
| 16 | Test Pit D soils. |
| 17 | Test Pit D debris (ceramic, plastic bag, and dust mask). |
| 18 | Test Pit E soils. |
| 19 | Test Pit E debris (cans, brick, rope, plastic, landscaper's cloth). |
| 20 | Test Pit F soils. |
| 21 | Test Pit F debris (rusted drum, shoes, rubber hose, glass). |
| 22 | Test Pit G with petroleum stained soils. |
| 23 | Test Pit H with petroleum stained soils and clothing. |
| 24 | Test Pit H rusted drum. |
| 25 | Test Pit I location. |
| 26 | Test Pit I with petroleum stained soils. |
| 27 | Test Pit J – No debris or impacted soils observed. |
| 28 | Test Pit K where rusted 30-gallon empty drum was observed. |
| 29 | Test Pit L area by abandoned automobile parts. |
| 30 | Test Pit L remnants removed (e.g., seat springs, frame and cover). |
| 31 | Monitoring Well 1 (MW-1) location at northwest corner of property. |
| 32 | MW-1 representative soils (e.g., gravel with sand at 10 to 15 feet below ground surface (bgs)). |
| 33 | MW-2 location near Excavation G. |
| 34 | MW-2 saturated soils from 40 to 45 feet bgs. |
| 35 | MW-3 location south of abandoned automobile area (e.g., south of Test Pit L). |
| 36 | MW-3 saturated soils from 40 to 50 feet bgs. |

| Photo Number | Photo Description |
|---|---|
| 37 | Excavation E: Bed springs uncovered during excavation. |
| 38 | Excavation E: Initial excavation at location of Test Pit E. |
| 39 | Excavation E: Debris encountered during excavation activities. |
| 40 | Excavation E: Rubber hose and debris encountered during excavation. |
| 41 | Excavation E: East end of final excavation. |
| 42 | Excavation E: West end of final excavation. |
| 43 | Excavation E: North end of final excavation. |
| 44 | Excavation E: North end of final excavation, facing east. |
| 45 | Excavation F during excavation activities. |
| 46 | Excavation F nearly completed. |
| 47 | Excavation G during excavation activities. |
| 48 | Excavation G: Oil stained timbers being removed. |
| 49 | Excavation G: Rusted empty 55-gallon drum with oil-stained soils. |
| 50 | Excavation G: West end of final excavation. |
| 51 | Excavation G: East end of final excavation. |
| 52 | Excavation H: Initial excavation work in berm at Test Pit I. |
| 53 | Excavation H: Waste oil impacted soils being removed from berm at east end of Excavation H. |
| 54 | Excavation H: Before trees were removed to excavate and remove contaminated soils. |
| 55 | Excavation H: Final excavation along north fence line, east end of Excavation H. |
| 56 | Excavation H: Final excavation, facing west. |
| 57 | Excavation H: North wall of final excavation facing west. |
| 58 | Excavation H: Final excavation bottom at east end. |
| 59 | Excavation H: Final excavation bottom at west end. |
| 60 | Excavation H: Final excavation, north sidewall. |
| 61 | Excavation H: Southeast corner where trees were removed, before final soil removal on 8/13/19. |
| 62 | Excavation H: Final excavation, facing east. |
| 63 | Monitoring Well 2 and Excavations G and H after placement of backfill material, facing east. |
| 64 | Excavation H at former Test Pit 9 location after placement of backfill. |
| 65 | Stockpile area in clearing, facing south. |
| 66 | Portions of Stockpiles H and E in background prior to being loaded into trucks for offsite disposal. |
| 67 | East end of clearing after Stockpile H was loaded out for offsite disposal. |

1. Initial site conditions facing west along north berm, west of Shannon & Wilson Test Pit 9 (TP-9).

2. Initial site conditions at TP-9.

3. Ditch 1 sample location behind west berm, near Test Pit B.

4. Ditch 2 sample location behind west berm, near Test Pit D.

5. Ditch 3 sample location behind north berm, near Test Pit F.

6. Ditch 4 sample location behind north berm, near Test Pit G.

7. Ditch 5 sample location behind berm, near Test Pit E; after additional excavation and resampling.

8. Ditch 6 sample location behind berm, near Test Pits I and J.

9. Test Pit A soils.

10. Test Pit A debris (black plastic seedling trays, glass, porcelain, brick, tin can, metal screen edging, plastic bags, steel threaded rod, and concrete).

11. Test Pit B soils.

12. Test Pit B debris (small concrete fragments – almost completely free of debris).

13. Test Pit C location.

14. Test Pit C soils.

15. Test Pit C debris (black plastic seedling trays, Bayer aspirin bottle, glass milk bottle, and ceramic plate).

16. Test Pit D soils.

17. Test Pit D debris (ceramic, plastic bag, and dust mask).

18. Test Pit E soils.

19. Test Pit E debris (cans, brick, rope, plastic, landscaper's cloth).

20. Test Pit F soils.

21. Test Pit F debris (rusted drum, shoes, rubber hose, glass).

22. Test Pit G with petroleum stained soils.

23. Test Pit H with petroleum stained soils and clothing.

24. Test Pit H rusted drum.

25. Test Pit I location.

26. Test Pit I with petroleum stained soils.

27. Test Pit J – No debris or impacted soils observed.

28. Test Pit K where rusted 30-gallon empty drum was observed.

29. Test Pit L area by abandoned automobile parts.

30. Test Pit L remnants removed (e.g., seat springs, frame and cover).

31. Monitoring Well 1 (MW-1) location at northwest corner of property.

32. MW-1 representative soils (e.g., gravel with sand at 10 to 15 feet below ground surface (bgs)).

33. MW-2 location near Excavation G.

34. MW-2 saturated soils from 40 to 45 feet bgs.

35. MW-3 location south of abandoned automobile area (e.g., south of Test Pit L).

36. MW-3 saturated soils from 40 to 50 feet bgs.

37. Excavation E: Bed springs uncovered during excavation.

38. Excavation E: Initial excavation at location of Test Pit E.

39. Excavation E: Debris encountered during excavation activities.

40. Excavation E: Rubber hose and debris encountered during excavation.

41. Excavation E: East end of final excavation.

42. Excavation E: West end of final excavation.

43. Excavation E: North end of final excavation.

44. Excavation E: North end of final excavation, facing east.

45. Excavation F during excavation activities.

46. Excavation F nearly completed.

47. Excavation G during excavation activities.

48. Excavation G: Oil stained timbers being removed.

49. Excavation G: Rusted empty 55-gallon drum with oil-stained soils.

50. Excavation G: West end of final excavation.

51. Excavation G: East end of final excavation.

52. Excavation H: Initial excavation work in berm at Test Pit I.

53. Excavation H: Waste oil impacted soils being removed from berm at east end of Excavation H.

54. Excavation H: Before trees were removed to excavate and remove contaminated soils.

55. Excavation H: Final excavation along north fence line, east end of Excavation H.

56. Excavation H: Final excavation, facing west.

57. Excavation H: North wall of final excavation facing west.

58. Excavation H: Final excavation bottom at east end.

59. Excavation H: Final excavation bottom at west end.

60. Excavation H: Final excavation, north sidewall.

61. Excavation H: Southeast corner where trees were removed, before final soil removal on 8/13/19.

62. Excavation H: Final excavation, facing east.

63. Monitoring Well 2 and Excavations G and H after placement of backfill material, facing east.

64. Excavation H at former Test Pit 9 location after placement of backfill.

65. Stockpile area in clearing, facing south.

66. Portions of Stockpiles H and E in background prior to being loaded into trucks for offsite disposal.

67. East end of clearing after Stockpile H was loaded out for offsite disposal.

# APPENDIX D

## Soil Disposal Manifests

| Date | Manifest # | Ticket # | Material | Facility | Carrier | Vehicle | Tons/Tonnes | Mat. Quantity | Mat. Unit |
|---|---|---|---|---|---|---|---|---|---|
| 07/29/2019 | 020584404JJK | 17780 | RCRA Haz Waste - Disposal | Chem Waste Landfill | R Transport Inc | 77 | 29.78 | 29.78 | TON |
| 07/30/2019 | 020584405JJK | 17808 | RCRA Haz Waste - Disposal | Chem Waste Landfill | R Transport Inc | 77 | 30.82 | 30.82 | TON |
| 07/31/2019 | 020584409JJK | 17966 | RCRA Haz Waste - Disposal | Chem Waste Landfill | R Transport Inc | 77 | 31.69 | 31.69 | TON |
| 07/31/2019 | 020584410JJK | 18131 | RCRA Haz Waste - Disposal | Chem Waste Landfill | R Transport Inc | 77 | 31.84 | 31.84 | TON |
| 08/09/2019 | 020584411JJK | 18427 | RCRA Haz Waste - Disposal | Chem Waste Landfill | R Transport Inc | 77 | 30.31 | 30.31 | TON |
| 08/09/2019 | 020584422JJK | 18429 | RCRA Haz Waste - Disposal | Chem Waste Landfill | R Transport Inc | 77 | 29.56 | 29.56 | TON |
| 08/09/2019 | 020584423JJK | 18430 | RCRA Haz Waste - Disposal | Chem Waste Landfill | R Transport Inc | 77 | 30.89 | 30.89 | TON |
| 08/15/2019 | 020584424JJK | 18660 | RCRA Haz Waste - Disposal | Chem Waste Landfill | R Transport Inc | 77 | 27.6 | 27.60 | TON |

27

471729

CWMI

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**UNIFORM HAZARDOUS WASTE MANIFEST**

| 1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | 4. Manifest Tracking Number |
|---|---|---|---|
| WAH000056336 | 1 | (800) 424-9300 | 020584423 JJK |

**GENERATOR**

5. Generator's Name and Mailing Address
PIERCE COUNTY PLANNING FUEL WK
1600 BLOCK OF WALLER ROAD E
TACOMA WA 98446
Generator's Phone: (253) 798-7893

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
R TRANSPORT
U.S. EPA ID Number
WAH000028338

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812-9709
Facility's Phone: (541) 454-2643
U.S. EPA ID Number
ORD089452369

| 9a. HM | 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) | 10. Containers No. | 10. Containers Type | 11. Total Quantity | 12. Unit Wt./Vol. | 13. Waste Codes | | |
|---|---|---|---|---|---|---|---|---|
| X | 1. RQ, NA3077, HAZARDOUS WASTE, SOLID, N.O.S., 9, III, (D008), (SOIL CONTAINING >10 LB LEAD) | 01 | DT | 60000 | P | D008 | | |
| | 2. | | | | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information
61780P
1. PROFILE OR842441;STA908 LEAD IMPACTED SOIL; ERG=171;RQ=10 LBS
E/R/P= CHEMTREC#CCN24117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Signing for Jeffery Stamer: Grent Ruhl
Signature
Month 08 Day 02 Year 19

**INT'L**

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

**TRANSPORTER**

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Nick Watkins
Signature
Month 08 Day 02 Year 19

Transporter 2 Printed/Typed Name
Signature
Month Day Year

**DESIGNATED FACILITY**

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

| 1. | 2. | 3. | 4. |
|---|---|---|---|
| H132 | | | |

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Dawn Dwyer
Signature
Month 8 Day 2 Year 19

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

D-2X6 471702 _CVWM

Please print or type. Form Approved. OMB No. 2050-0039

**UNIFORM HAZARDOUS WASTE MANIFEST**

| 1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | 4. Manifest Tracking Number |
|---|---|---|---|
| WAH000002936 | 1 | (800)424-9300 | 020584422 JJK |

**GENERATOR**

5. Generator's Name and Mailing Address
PIERCE COUNTY PLANNING PUBL WK
1600 BLOCK OF WALLER ROAD E
TACOMA WA 98445
Generator's Phone: (253)798-7483

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: R TRANSPORT — U.S. EPA ID Number: WAH000028336

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812-9799
Facility's Phone: (541)454-2643
U.S. EPA ID Number: ORD089452362

| 9a. HM | 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) | 10. Containers No. | 10. Containers Type | 11. Total Quantity | 12. Unit Wt./Vol. | 13. Waste Codes | | |
|---|---|---|---|---|---|---|---|---|
| X | 1. RQ, NA3077, HAZARDOUS WASTE, SOLID, N.O.S. 9, III, (D008), SOIL CONTAINING >10LB LEAD) | 01 | DT | 60,000 | P | D008 | | |
| | 2. | | | | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information
PROFILE ORM24 / STAB03 LEAD IMPACTED SOIL, ERG=171, RQ=10 LBS S9120P
ERAP= CHEMTREC#CCN24117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Brent Ruhl — Signature — Month: 08 Day: 01 Year: 19

**INT'L**

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

**TRANSPORTER**

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Nick Watkins — Signature — Month: 08 Day: 01 Year: 19

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

**DESIGNATED FACILITY**

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month — Day — Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

| 1. | 2. | 3. | 4. |
|---|---|---|---|
| H132 | | | |

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name — Signature — Month: 8 Day: 1 Year: 19

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete. **DESIGNATED FACILITY TO GENERATOR**

R-77 471667 CMM

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| UNIFORM HAZARDOUS WASTE MANIFEST | 1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | 4. Manifest Tracking Number |
|---|---|---|---|---|
| | WAHD000539335 | 1 | (800) 424-9300 | 020584410 JJK |

**GENERATOR**

5. Generator's Name and Mailing Address
PIERCE COUNTY PLANNING PUBL WK
1500 BLOCK OF WALLER ROAD E
TACOMA WA 98445
Generator's Phone: (253) 798-7583

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
R TRANSPORT
U.S. EPA ID Number: WAD000628388

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812-9709
Facility's Phone: (541) 454-2343
U.S. EPA ID Number: ORD084523683

| 9a. HM | 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) | 10. Containers No. | 10. Containers Type | 11. Total Quantity | 12. Unit Wt./Vol. | 13. Waste Codes | | |
|---|---|---|---|---|---|---|---|---|
| X | 1. RQ, NA3077, HAZARDOUS WASTE, SOLID, N.O.S., 9, III, (D008), (SOIL CONTAINING >10 LB LEAD) | 01 | DT | 60,000 | P | D008 | | |
| | 2. | | | | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information
PROFICE OR36244; STAB08 LEAD IMPACTED SOIL: ERG=171; 20*10 LBS 636680 AF
E/RP= CHEMTREC#CCN24117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: GENEGE IFTNER | Signature | Month 07 | Day 30 | Year 19

**INTL**

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

**TRANSPORTER**

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Nick Watkins | Signature | Month 07 | Day 30 | Year 19

Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

**DESIGNATED FACILITY**

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) | Month | Day | Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

| 1. | 2. | 3. | 4. |
|---|---|---|---|
| H132 | | | |

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Dawn Dino | Signature | Month 7 | Day 30 | Year 19

RL 77 471684 CWMI

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**UNIFORM HAZARDOUS WASTE MANIFEST**

| 1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | 4. Manifest Tracking Number |
|---|---|---|---|
| WAH000056836 | 1 | (800) 424-9300 | 020534411 JJK |

**GENERATOR**

5. Generator's Name and Mailing Address
PIERCE COUNTY PLANNING PUBL WK
1600 BLOCK OF WALLER ROAD E
TACOMA WA 98446
Generator's Phone: (253) 798-7653

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
R TRANSPORT
U.S. EPA ID Number: WAH000028338

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812-9700
Facility's Phone: (541) 454-2643
U.S. EPA ID Number: ORD089452353

| 9a. HM | 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) | 10. Containers No. | 10. Containers Type | 11. Total Quantity | 12. Unit Wt./Vol. | 13. Waste Codes | | |
|---|---|---|---|---|---|---|---|---|
| X | 1. RQ, NA3077, HAZARDOUS WASTE, SOLID, N.O.S., 9, III, (D008), (SOIL CONTAINING >10 LB LEAD) | 01 | DT | 60,000 | P | D008 | | |
| | 2. | | | | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information
1. PROFILE OR34241, STAB03 LEAD IMPACTED SOIL, ERG=171, RQ=10 LBS
E/R/P= CHEMTREC#CCN24117
60620 P

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Brent Ruhl | Signature: Brent Ruhl | Month: 07 | Day: 31 | Year: 19

**INT'L**

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

**TRANSPORTER**

17. Transporter Acknowledgment of Receipt of Materials

| Transporter 1 Printed/Typed Name | Signature | Month | Day | Year |
|---|---|---|---|---|
| Nick Watkins | | 07 | 31 | 19 |
| Transporter 2 Printed/Typed Name | Signature | Month | Day | Year |
| | | | | |

**DESIGNATED FACILITY**

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

| 1. | 2. | 3. | 4. |
|---|---|---|---|
| H132 | | | |

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

| Printed/Typed Name | Signature | Month | Day | Year |
|---|---|---|---|---|
| | | 7 | 3 | 19 |

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

T-77 471490 OWM

Please print or type. Form Approved. OMB No. 2050-0039

**UNIFORM HAZARDOUS WASTE MANIFEST**

1. Generator ID Number: WAH000000935
2. Page 1 of: 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 020584404 JJK

**GENERATOR**

5. Generator's Name and Mailing Address
PIERCE COUNTY PLANNING PUBL WK
1800 BLOCK OF WALLER ROAD E
TACOMA WA 98445
Generator's Phone: (253) 798-7565

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
[illegible] TRANSPORT
U.S. EPA ID Number: WAD988220338

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC
11120 CEDAR SPRINGS LANE
ARLINGTON OR 97812-9709
Facility's Phone: (541) 454-2012
U.S. EPA ID Number: ORD089452353

| 9a. HM | 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) | 10. Containers No. | 10. Containers Type | 11. Total Quantity | 12. Unit Wt./Vol. | 13. Waste Codes | | |
|---|---|---|---|---|---|---|---|---|
| X | 1. RQ, NA3077, HAZARDOUS WASTE, SOLID, N.O.S., 9, III, (D008), (SOIL CONTAINING >10 LB LEAD) | 01 | DT | 60,000 | P | D008 | | |
| | 2. | | | | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information
1. PROFILE ORS42441;STAB08 LEAD IMPACTED SOIL; ERG=171;RQ=10 LBS
2. R/P= CHEMTREC#CCN24117
595600P

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: GEORGE IFTNER
Signature: [signature]
Month: 07 Day: 22 Year: 19

**INT'L**

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

**TRANSPORTER**

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Nick Watkins
Signature: [signature]
Month: 07 Day: 22 Year: 19

Transporter 2 Printed/Typed Name:
Signature:
Month: Day: Year:

**DESIGNATED FACILITY**

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month: Day: Year:

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

| 1. | 2. | 3. | 4. |
|---|---|---|---|
| H132 | | | |

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: [illegible]
Signature: [signature]
Month: 7 Day: 22 Year: 19

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

**DESIGNATED FACILITY TO GENERATOR**

TR-77 471581 CWM

Please print or type. Form Approved, OMB No. 2050-0039

**UNIFORM HAZARDOUS WASTE MANIFEST**

1. Generator ID Number: WAH000056935
2. Page 1 of: 1
3. Emergency Response Phone: (800)424-9300
4. Manifest Tracking Number: 020584409 JJK

5. Generator's Name and Mailing Address
PIERCE COUNTY PLANNING PUBL WK
1600 BLOCK OF WALLER ROAD E
TACOMA WA 98445
Generator's Phone: (253)798-7693

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: R TRANSPORT
U.S. EPA ID Number: WAH000028338

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812-9709
Facility's Phone: (541)454-2843
U.S. EPA ID Number: ORD089462363

| 9a. HM | 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) | 10. Containers No. | 10. Containers Type | 11. Total Quantity | 12. Unit Wt./Vol. | 13. Waste Codes | | |
|---|---|---|---|---|---|---|---|---|
| X | 1. RQ, NA3077, HAZARDOUS WASTE, SOLID, N.O.S., 9(II), (D008), (SOIL CONTAINING >10 LB LEAD) | 01 | DT | 60000 | P | D008 | | |
| | 2. | | | | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information
1. PROFILE OR24241, STA303 LEAD IMPACTED SOIL, ERG=171, RQ=10 LBS
E/R/P= CHEMTREC#CCN24117
63380P

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: George Iffrig | Signature: George Iffrig | Month: 07 | Day: 26 | Year: 19

**INT'L**

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

**TRANSPORTER**

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Nick Watkins | Signature | Month: 07 | Day: 26 | Year: 19

Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

**DESIGNATED FACILITY**

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) | U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) | Month | Day | Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

| 1. | 2. | 3. | 4. |
|---|---|---|---|
| H132 | | | |

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Dawn Dinkel | Signature | Month: 7 | Day: 26 | Year: 19

EPA Form 8700-22 (Rev. 12-17). Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

T-77 471916 CWMI

Please print or type. Form Approved. OMB No. 2050-0039

**UNIFORM HAZARDOUS WASTE MANIFEST**

| 1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | 4. Manifest Tracking Number |
|---|---|---|---|
| WAH000058335 | 1 | (800) 424-9300 | 020584424 JJK |

**GENERATOR**

5. Generator's Name and Mailing Address
PIERCE COUNTY PLANNING FUEL WK
1800 BLOCK OF WALLER ROAD E
TACOMA WA 98445
Generator's Phone: (253) 798-7269

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
R TRANSPORT
U.S. EPA ID Number: WAH000028336

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812-9706
Facility's Phone: (541) 454-2343
U.S. EPA ID Number: ORD089452359

| 9a. HM | 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) | 10. Containers No. | 10. Containers Type | 11. Total Quantity | 12. Unit Wt./Vol. | 13. Waste Codes |
|---|---|---|---|---|---|---|
| X | 1. RQ, NA3077, HAZARDOUS WASTE, SOLID, N.O.S., 9, III, (D008), (SOIL CONTAINING >10 LB LEAD) | 01 | DT | 55,000 | P | D008 |
| | 2. | | | | | |
| | 3. | | | | | |
| | 4. | | | | | |

14. Special Handling Instructions and Additional Information
55200P
1. PROFILE OR2#2441;STAB03 LEAD IMPACTED SOIL; ERG=171;RQ=10 LBS
E/R/P= CHEMTREC#CCN2#117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Brent Rahl — Signature — Month: 08 Day: 12 Year: 19

**INT'L**

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

**TRANSPORTER**

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Nick Watkins — Signature — Month: 08 Day: 12 Year: 19

Transporter 2 Printed/Typed Name — Signature — Month Day Year

**DESIGNATED FACILITY**

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

| 1. | 2. | 3. | 4. |
|---|---|---|---|
| H132 | | | |

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: L. Dawn Dirks — Signature — Month: 8 Day: 12 Year: 19

92-77 471553 CWMI

Please print or type. Form Approved. OMB No. 2050-0039

**UNIFORM HAZARDOUS WASTE MANIFEST**

1. Generator ID Number: WAH000056935
2. Page 1 of: 1
3. Emergency Response Phone: (800)424-9300
4. Manifest Tracking Number: 020584405 JJK

**GENERATOR**

5. Generator's Name and Mailing Address: PIERCE COUNTY PLANNING PUBL WK
1600 BLOCK OF WALLER ROAD E
TACOMA WA 98446
Generator's Phone: (253) 798-7693

Generator's Site Address (if different than mailing address):

6. Transporter 1 Company Name: R TRANSPORT
U.S. EPA ID Number: WAH000028338

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address: CHEMICAL WASTE MANAGEMENT, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812-9709
Facility's Phone: (541) 454-2643
U.S. EPA ID Number: ORD089452353

| 9a. HM | 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) | 10. Containers No. | 10. Containers Type | 11. Total Quantity | 12. Unit Wt./Vol. | 13. Waste Codes | | |
|---|---|---|---|---|---|---|---|---|
| X | 1. RQ, NA3077, HAZARDOUS WASTE, SOLID, N.O.S., 9, III, (D008), SOIL CONTAINING >10 CB LEAD | 01 | DT | 20 yds | P | D008 | | |
| | 2. | | | | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information: 1 PROFILE OR3M41.5 1808 LEAD IMPACTED SOIL, ERG=171, RQ=10,000 LBS (D)CHOP
E/R/P= CHEMTREC#CCN#117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: GEORGE FITNER
Signature: George Fitner
Month: 07 Day: 25 Year: 19

**INT'L**

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

**TRANSPORTER**

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Nick Watkins
Signature:
Month: 07 Day: 25 Year: 19
Transporter 2 Printed/Typed Name:
Signature:
Month: Day: Year:

**DESIGNATED FACILITY**

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number:
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month: Day: Year:

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

| 1. | 2. | 3. | 4. |
|---|---|---|---|
| H132 | | | |

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: T. Dean Quigley
Signature:
Month: 7 Day: 25 Year: 19

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

# PCS Hauled to LRI

# August 12 thru August 14, 2019

# 759.28 Tons

Tacoma - Pierce County
Health Department
*Healthy People In Healthy Communities*
www.tpchd.org

# No. 2365

prepaid check 24503
Langseth
DB

## WASTE DISPOSAL AUTHORIZATION

(XX) Non-Asbestos (XX) New
( ) Asbestos (PSCAA Case # _____) ( ) Renewal

A. Generator Name: Pierce County Planning and Public Works
B. Generator Address: 17000 Waller Road East, Tacoma
C. Transporter Name: Langseth Environmental Services, Inc.
D. Technical Contact: Tom Langseth, Langseth Environmental Phone: (253) 536-6961
E. Waste Description: Contaminated Soils
( ) Sludge (XX) Solid ( ) PCS (XX) Other
F. Estimated Quantity: **1,000 Tons**
G. **Actual Quantity (Filled in upon disposal):** _____
H. Multiple Loads: (XX) Yes ( ) No
I. Dates of Disposal: **August 2, 2019 to December 31, 2019**
J. Testing: NWTPH; PAH's, VOC's, Total Metals, TCLP lead
K. Reviewed by Department of Ecology: ( ) Yes (XX) No
L. Disposal/Transportation Requirements: **A copy of this WDA must be transported with EACH load of waste and presented to the LRI Landfill Scalehouse Operator.** Soils from this project shall be directly disposed in the landfill. Loads shall be covered during transport to the landfill to prevent fugitive emissions of contaminated soils. Load sizes shall comply with conditional-use and solid waste permit criteria.
M. Facility: (XX) **LRI Landfill (304th Street LF), 30919 Meridian Street, Eatonville, WA**

### CERTIFICATION

I hereby certify that I have personally examined and am familiar with the information submitted in this document and any supporting material. Based on my inquiry of those individuals immediately responsible for obtaining the information, the information submitted is true, accurate and complete to the best of my knowledge and ability and that all known and suspected hazards have been disclosed. I agree that the generator and/or transporter will abide by all conditions specified in line (L) or any attachments thereto.

8-2-19 Pres/Owner Don Gault
Date Title Signature

**AUTHORIZED BY:**

David Bosch

David Bosch, TPCHD 253 798 6574

Cc: LRI LF Scalehouse via email

**APPROVED**

AUG 02 2019

TACOMA-PIERCE COUNTY HEALTH DEPT.
ENVIRONMENTAL HEALTH DIV.
For Official Use Only

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: Rebecca

Deposit: Rebecca

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 15
PO #: WDA 2365

NOTES: HARLOW 15

Origin: OTHER

DATE IN: 08/12/2019 TIME IN: 13:01:29
DATE OUT: 08/12/2019 TIME OUT: 13:20:20

INBOUND TICKET Number: 03-00584156

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 109500 | LB |
| SCALE 2 TARE WT. | 40900 | LB |
| NET WEIGHT | 68600 | LB |

| Qty | Description | Amount |
|---|---|---|
| 34.300 | SPECIAL WASTE-OUT CO | |

X_____

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: Rebecca

Deposit: Rebecca

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 10
PO #: WDA 2365

NOTES: HARLOW 10

Origin: OTHER

DATE IN: 08/12/2019 TIME IN: 12:26:45
DATE OUT: 08/12/2019 TIME OUT: 12:44:31

INBOUND TICKET Number: 03-00584149

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 108080 | LB |
| SCALE 2 TARE WT. | 40500 | LB |
| NET WEIGHT | 67580 | LB |

| Qty | Description | Amount |
|---|---|---|
| 33.790 | SPECIAL WASTE-OUT CO | |

X_____

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: Rebecca

Deposit: Rebecca

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 10
PO #: WDA 2365

NOTES: HARLOW 10

Origin: OTHER

DATE IN: 08/12/2019 TIME IN: 14:17:49
DATE OUT: 08/12/2019 TIME OUT: 14:39:33

INBOUND TICKET Number: 03-00584190

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 103340 | LB |
| SCALE 2 TARE WT. | 40440 | LB |
| NET WEIGHT | 62900 | LB |

| Qty | Description | Amount |
|---|---|---|
| 31.450 | SPECIAL WASTE-OUT CO | |

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: Rebecca

Deposit: Rebecca

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 24
PO #: WDA 2365

NOTES: HARLOW 24

Origin: OTHER

DATE IN: 08/12/2019 TIME IN: 13:58:33
DATE OUT: 08/12/2019 TIME OUT: 14:17:19

INBOUND TICKET Number: 03-00584185

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 113640 | LB |
| SCALE 2 TARE WT. | 40920 | LB |
| NET WEIGHT | 72720 | LB |

| Qty | Description | Amount |
|---|---|---|
| 36.360 | SPECIAL WASTE-OUT CO | |

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: Rebecca

Deposit: Rebecca

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 10
PO #: WDA 2365

NOTES: HARLOW 10

Origin: OTHER

DATE IN: 08/12/2019 TIME IN: 10:30:15
DATE OUT: 08/12/2019 TIME OUT: 10:48:46

INBOUND TICKET Number: 03-00584085

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 99080 | LB |
| SCALE 2 TARE WT. | 40540 | LB |
| NET WEIGHT | 58540 | LB |

| Qty | Description | Amount |
|---|---|---|
| 29.270 | SPECIAL WASTE-OUT CO | |

X_____

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: Rebecca

Deposit: Rebecca

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 24
PO #: WDA 2365

NOTES: HARLOW 24

Origin: OTHER

DATE IN: 08/12/2019 TIME IN: 10:09:58
DATE OUT: 08/12/2019 TIME OUT: 10:35:31

INBOUND TICKET Number: 03-00584078

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 96060 | LB |
| SCALE 2 TARE WT. | 41100 | LB |
| NET WEIGHT | 54960 | LB |

| Qty | Description | Amount |
|---|---|---|
| 27.480 | SPECIAL WASTE-OUT CO | |

X_____

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: Rebecca

Deposit: Rebecca

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 24
PO #: WDA 2365

NOTES: HARLOW 24

Origin: OTHER

DATE IN: 08/12/2019 TIME IN: 12:04:27
DATE OUT: 08/12/2019 TIME OUT: 12:26:31

INBOUND TICKET Number: 03-00584142

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 107760 | LB |
| SCALE 2 TARE WT. | 40980 | LB |
| NET WEIGHT | 66780 | LB |

| Qty | Description | Amount |
|---|---|---|
| 33.390 | SPECIAL WASTE-OUT CO | |

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: Rebecca

Deposit: Rebecca

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 15
PO #: WDA 2365

NOTES: HARLOW 15

Origin: OTHER

DATE IN: 08/12/2019 TIME IN: 10:50:33
DATE OUT: 08/12/2019 TIME OUT: 11:08:05

INBOUND TICKET Number: 03-00584096

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 99400 | LB |
| SCALE 2 TARE WT. | 40960 | LB |
| NET WEIGHT | 58440 | LB |

| Qty | Description | Amount |
|---|---|---|
| 29.220 | SPECIAL WASTE-OUT CO | |

** Duplicate Ticket **

PCRCD, LLC dba LRI-304th
17925 Meridian St E
Puyallup, WA 98375
(253) 847-7555

1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA, WA 98404

| SITE | TICKET | GRID | WEIGHMASTER |
|---|---|---|---|
| 03 | 584206 | | REBECCAW |

| DATE IN | DATE OUT | TIME IN | TIME OUT | VEHICLE | ROLL OFF |
|---|---|---|---|---|---|
| 08/12/19 | 08/12/19 | 14:54 | 15:12 | | |

| REFERENCE | ORIGIN |
|---|---|
| 15 | OTHER |

Scale Gross Wt. 104500
Scale Tare Wt. 40800 Charge Ticket
Net Weight 63700

| QTY | UNIT | DESCRIPTION | RATE | EXTENSION | FEE | TOTAL |
|---|---|---|---|---|---|---|
| 31.85 | | SPECIAL WASTE-OUT CO | | | | |

Operating hours 8AM to 4PM M-F & 8AM to Noon on Sat.
304th Landfill-30919 Meridian/SR 161, Graham, WA

| CHARGE |
|---|
| |
| TENDER |
| |
| CHANGE |
| |
| CHECK # |
| |

PO # WDA 2365
NOTES HARLOW 15

SIGNATURE:_____

** Duplicate Ticket **

PCRCD, LLC dba LRI-304th
17925 Meridian St E
Puyallup, WA 98375
(253) 847-7555

1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA, WA 98404

| SITE | TICKET | GRID | WEIGHMASTER |
|---|---|---|---|
| 03 | 584235 | | BREANNL |

| DATE IN | DATE OUT | TIME IN | TIME OUT | VEHICLE | ROLL OFF |
|---|---|---|---|---|---|
| 08/13/19 | 08/13/19 | 8:06 | 8:23 | | |

| REFERENCE | ORIGIN |
|---|---|
| 24 | OTHER |

Scale Gross Wt. 103480
Scale Tare Wt. 41100 Charge Ticket
Net Weight 62380

| QTY | UNIT | DESCRIPTION | RATE | EXTENSION | FEE | TOTAL |
|---|---|---|---|---|---|---|
| 31.19 | | SPECIAL WASTE-OUT CO | | | | |

Operating hours 8AM to 4PM M-F & 8AM to Noon on Sat.
304th Landfill-30919 Meridian/SR 161, Graham, WA

| CHARGE |
|---|
| |
| TENDER |
| |
| CHANGE |
| |
| CHECK # |
| |

PO # WDA 2365
NOTES HARLOW 24

SIGNATURE:_____

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: BREANN

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 4
PO #: WDA 2365

NOTES: HARLOW 4

Origin: OTHER

DATE IN: 08/13/2019 TIME IN: 10:56:02
DATE OUT: 08/13/2019 TIME OUT: 10:56:02

INBOUND TICKET Number: 03-00584336

| | | |
|---|---|---|
| MANUAL GROSS WT. | 107600 | LB |
| MANUAL TARE WT. | 42060 | LB |
| NET WEIGHT | 65540 | LB |

| Qty | Description | Amount |
|---|---|---|
| 32.770 | SPECIAL WASTE-OUT CO | |

X_____

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: BREANN

Deposit: Rebecca

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 15
PO #: WDA 2365

NOTES: HARLOW 15

Origin: OTHER

DATE IN: 08/13/2019 TIME IN: 10:54:50
DATE OUT: 08/13/2019 TIME OUT: 11:12:43

INBOUND TICKET Number: 03-00584334

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 107240 | LB |
| SCALE 2 TARE WT. | 41660 | LB |
| NET WEIGHT | 65580 | LB |

| Qty | Description | Amount |
|---|---|---|
| 32.790 | SPECIAL WASTE-OUT CO | |

X_____

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: BREANN

Deposit: Rebecca

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 4
PO #: WDA 2365

NOTES: HARLOW 4

Origin: OTHER

DATE IN: 08/13/2019 TIME IN: 11:16:34
DATE OUT: 08/13/2019 TIME OUT: 11:31:54

INBOUND TICKET Number: 03-00584347

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 103660 | LB |
| SCALE 2 TARE WT. | 42020 | LB |
| NET WEIGHT | 61640 | LB |

| Qty | Description | Amount |
|---|---|---|
| 30.820 | SPECIAL WASTE-OUT CO | |

X_____

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: BREANN

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 15
PO #: WDA 2365

NOTES: HARLOW 15

Origin: OTHER

DATE IN: 08/13/2019 TIME IN: 10:55:25
DATE OUT: 08/13/2019 TIME OUT: 10:55:25

INBOUND TICKET Number: 03-00584335

| | | |
|---|---|---|
| MANUAL GROSS WT. | 110600 | LB |
| MANUAL TARE WT. | 40900 | LB |
| NET WEIGHT | 69700 | LB |

| Qty | Description | Amount |
|---|---|---|
| 34.850 | SPECIAL WASTE-OUT CO | |

X_____

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: BREANN

Deposit: Rebecca

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 15
PO #: WDA 2365

NOTES: HARLOW 15

Origin: OTHER

DATE IN: 08/13/2019 TIME IN: 14:31:15
DATE OUT: 08/13/2019 TIME OUT: 14:47:47

INBOUND TICKET Number: 03-00584438

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 99720 | LB |
| SCALE 2 TARE WT. | 40740 | LB |
| NET WEIGHT | 58980 | LB |

| Qty | Description | Amount |
|---|---|---|
| 29.490 | SPECIAL WASTE-OUT CO | |

X_____

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: BREANN

Deposit: Rebecca

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 4
PO #: WDA 2365

NOTES: HARLOW 4

Origin: OTHER

DATE IN: 08/13/2019 TIME IN: 12:52:00
DATE OUT: 08/13/2019 TIME OUT: 13:11:24

INBOUND TICKET Number: 03-00584404

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 102380 | LB |
| SCALE 2 TARE WT. | 41840 | LB |
| NET WEIGHT | 60540 | LB |

| Qty | Description | Amount |
|---|---|---|
| 30.270 | SPECIAL WASTE-OUT CO | |

X_____

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: BREANN

Deposit: Rebecca

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 15
PO #: WDA 2365

NOTES: HARLOW 15

Origin: OTHER

DATE IN: 08/13/2019 TIME IN: 12:38:17
DATE OUT: 08/13/2019 TIME OUT: 12:56:26

INBOUND TICKET Number: 03-00584395

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 106700 | LB |
| SCALE 2 TARE WT. | 40760 | LB |
| NET WEIGHT | 65940 | LB |

| Qty | Description | Amount |
|---|---|---|
| 32.970 | SPECIAL WASTE-OUT CO | |

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: BREANN

Deposit: Rebecca

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 4
PO #: WDA 2365

NOTES: HARLOW 4

Origin: OTHER

DATE IN: 08/13/2019 TIME IN: 14:51:45
DATE OUT: 08/13/2019 TIME OUT: 15:05:33

INBOUND TICKET Number: 03-00584448

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 102160 | LB |
| SCALE 2 TARE WT. | 41820 | LB |
| NET WEIGHT | 60340 | LB |

| Qty | Description | Amount |
|---|---|---|
| 30.170 | SPECIAL WASTE-OUT CO | |

** Duplicate Ticket **

PCRCD, LLC dba LRI-304th
17925 Meridian St E
Puyallup, WA 98375
(253) 847-7555

1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA, WA 98404

| SITE | TICKET | GRID | WEIGHMASTER |
|---|---|---|---|
| 03 | 584337 | | BREANNL |

| DATE IN | DATE OUT | TIME IN | TIME OUT | VEHICLE | ROLL OFF |
|---|---|---|---|---|---|
| 08/13/19 | 08/13/19 | 10:56 | 10:56 | | |

| REFERENCE | ORIGIN |
|---|---|
| 24 | OTHER |

Manual Gross Wt. 102240
Manual Tare Wt. 41080
Net Weight 61160

Charge Ticket

| QTY | UNIT | DESCRIPTION | RATE | EXTENSION | FEE | TOTAL |
|---|---|---|---|---|---|---|
| 30.58 | | SPECIAL WASTE-OUT CO | | | | |

Operating hours 8AM to 4PM M-F & 8AM to Noon on Sat.
304th Landfill-30919 Meridian/SR 161, Graham, WA

| CHARGE |
|---|
| |
| TENDER |
| |
| CHANGE |
| |
| CHECK# |
| |

PO # WDA 2365
NOTES HARLOW 24

SIGNATURE:_____

---

** Duplicate Ticket **

PCRCD, LLC dba LRI-304th
17925 Meridian St E
Puyallup, WA 98375
(253) 847-7555

1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA, WA 98404

| SITE | TICKET | GRID | WEIGHMASTER |
|---|---|---|---|
| 03 | 584364 | | BREANNL |

| DATE IN | DATE OUT | TIME IN | TIME OUT | VEHICLE | ROLL OFF |
|---|---|---|---|---|---|
| 08/13/19 | 08/13/19 | 11:47 | 12:10 | | |

| REFERENCE | ORIGIN |
|---|---|
| 24 | OTHER |

Scale Gross Wt. 96720
Scale Tare Wt. 40920
Net Weight 55800

Charge Ticket

| QTY | UNIT | DESCRIPTION | RATE | EXTENSION | FEE | TOTAL |
|---|---|---|---|---|---|---|
| 27.90 | | SPECIAL WASTE-OUT CO | | | | |

Operating hours 8AM to 4PM M-F & 8AM to Noon on Sat.
304th Landfill-30919 Meridian/SR 161, Graham, WA

| CHARGE |
|---|
| |
| TENDER |
| |
| CHANGE |
| |
| CHECK# |
| |

PO # WDA 2365
NOTES HARLOW 24

SIGNATURE:_____

** Duplicate Ticket **

PCRCD, LLC dba LRI-304th
17925 Meridian St E
Puyallup, WA 98375
(253) 847-7555

1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA, WA 98404

| SITE | TICKET | GRID | WEIGHMASTER |
|---|---|---|---|
| 03 | 584417 | | BREANNL |

| DATE IN | DATE OUT | TIME IN | TIME OUT | VEHICLE | ROLL OFF |
|---|---|---|---|---|---|
| 08/13/19 | 08/13/19 | 13:30 | 13:50 | | |

| REFERENCE | ORIGIN |
|---|---|
| 24 | OTHER |

Scale Gross Wt. 97620
Scale Tare Wt. 40900
Net Weight 56720

Charge Ticket

| QTY | UNIT | DESCRIPTION | RATE | EXTENSION | FEE | TOTAL |
|---|---|---|---|---|---|---|
| 28.36 | | SPECIAL WASTE-OUT CO | | | | |

Operating hours 8AM to 4PM M-F & 8AM to Noon on Sat.
304th Landfill-30919 Meridian/SR 161, Graham, WA

| CHARGE |
|---|
| |
| TENDER |
| |
| CHANGE |
| |
| CHECK # |
| |

PO # WDA 2365
NOTES HARLOW 24

SIGNATURE:_____

** Duplicate Ticket **

PCRCD, LLC dba LRI-304th
17925 Meridian St E
Puyallup, WA 98375
(253) 847-7555

1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA, WA 98404

| SITE | TICKET | GRID | WEIGHMASTER |
|---|---|---|---|
| 03 | 584458 | | REBECCAW |

| DATE IN | DATE OUT | TIME IN | TIME OUT | VEHICLE | ROLL OFF |
|---|---|---|---|---|---|
| 08/13/19 | 08/13/19 | 15:18 | 15:37 | | |

| REFERENCE | ORIGIN |
|---|---|
| 24 | OTHER |

Scale Gross Wt. 98480
Scale Tare Wt. 40780
Net Weight 57700

Charge Ticket

| QTY | UNIT | DESCRIPTION | RATE | EXTENSION | FEE | TOTAL |
|---|---|---|---|---|---|---|
| 28.85 | | SPECIAL WASTE-OUT CO | | | | |

Operating hours 8AM to 4PM M-F & 8AM to Noon on Sat.
304th Landfill-30919 Meridian/SR 161, Graham, WA

| CHARGE |
|---|
| |
| TENDER |
| |
| CHANGE |
| |
| CHECK # |
| |

PO # WDA 2365
NOTES HARLOW 24

SIGNATURE:_____

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: Rebecca

Deposit: Dana

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 24
PO #: WDA 2365

NOTES: HARLOW 24

Origin: OTHER

DATE IN: 08/14/2019 TIME IN: 12:20:27
DATE OUT: 08/14/2019 TIME OUT: 12:35:27

INBOUND TICKET Number: 03-00584634

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 57180 | LB |
| SCALE 2 TARE WT. | 40920 | LB |
| NET WEIGHT | 16260 | LB |

| Qty | Description | Amount |
|---|---|---|
| 8.130 | SPECIAL WASTE-OUT CO | |

X_____

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: Rebecca

Deposit: Dana

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 24
PO #: WDA 2365

NOTES: HARLOW 24

Origin: OTHER

DATE IN: 08/14/2019 TIME IN: 10:43:01
DATE OUT: 08/14/2019 TIME OUT: 11:03:32

INBOUND TICKET Number: 03-00584575

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 107500 | LB |
| SCALE 2 TARE WT. | 41000 | LB |
| NET WEIGHT | 66500 | LB |

| Qty | Description | Amount |
|---|---|---|
| 33.250 | SPECIAL WASTE-OUT CO | |

X_____

PCRCD, LLC dba LRI-304th
304TH LANDFILL
17925 Meridian St E
Puyallup, WA 98375

Weighed: Rebecca

Deposit: Dana

BILL TO: 1080
LANGSETH ENVIRO SVCS, INC
7517 PORTLAND AVE
TACOMA WA 98404

Vehicle ID:
Reference: 24
PO #: WDA 2365

NOTES: HARLOW 24

Origin: OTHER

DATE IN: 08/14/2019 TIME IN: 08:58:45
DATE OUT: 08/14/2019 TIME OUT: 09:18:34

INBOUND TICKET Number: 03-00584519

| | | |
|---|---|---|
| SCALE 1 GROSS WT. | 100620 | LB |
| SCALE 2 TARE WT. | 41060 | LB |
| NET WEIGHT | 59560 | LB |

| Qty | Description | Amount |
|---|---|---|
| 29.780 | SPECIAL WASTE-OUT CO | |

X

# APPENDIX E

# Monitoring Well Logs

# SOIL BORING AND MONITORING WELL CONSTRUCTION RECORD

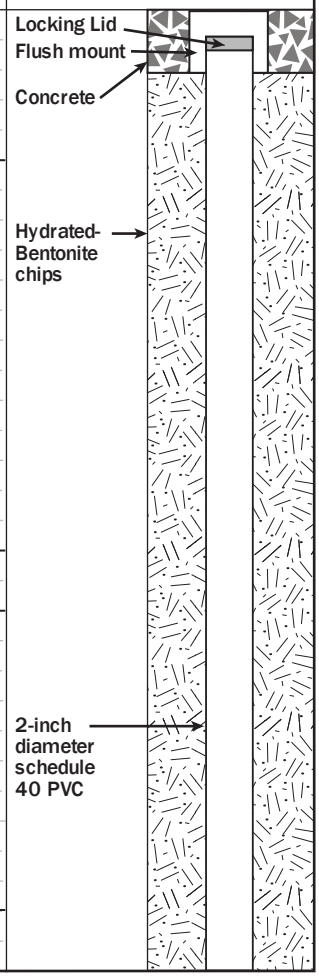
HERRERA

**Monitoring Well** MW-1
**Total depth:** 51 feet
**Sheet** 1 of 3

Project name: 13.4-Acre Undeveloped Parcel, Pierce County, WA
Project number: 16-06310-011
Client: Pierce County
Location: NW Corner of Parcel. 10' east, 15' south of fence corner
HEC rep.: George Iftner
Start/End Date: 07/30/2019

Drilling Contractor: Holocene
Drilling method: Sonic
Sampling method: Bag
Ground Elevation: 379.48 feet
Air monitoring (y/n): N
Instrument(s): na

| Instrument Reading (ppm) | Sample Interval, Type | % Recovery | Depth (feet, BGS) | Water Level (feet) | Soil Group | Soil Description |
|---|---|---|---|---|---|---|
| | | | | | SM | Grass, dark brown-black silty sand with gravel (dry) (no odors or discoloration) |
| NA | | | 1 | | | |
| | | | 2 | | | |
| | 5' Bag. | 60% | | | | |
| | | | 3 | | GP-GM | Tan fine to large GRAVEL with sand, silt, cobbles (dry) (no odors or discoloration) (weathered recessional outwash) |
| | | | 4 | | | |
| | | | 5 | | | |
| | | | | | | Color change to light gray GRAVEL with sand, silt, cobbles (dry) (unweathered recessional outwash) |
| | | | 6 | | | |
| | | | 7 | | | |
| | 5' | 80% | | | | |
| | | | 8 | | | |
| | | | 9 | | | |
| | | | | | GP | Gray sandy GRAVEL, with trace silt (damp) |
| | | | 10 | | GP-GM | Light gray GRAVEL with sand, cobbles, trace silt (damp) |
| | | | 11 | | | |
| | | | 12 | | | |
| | 5' | 90% | | | | |
| | | | 13 | | | |
| | | | 14 | | | |
| | | | 15 | | | |
| | | | | | GP | 6"-1' gray sandy GRAVEL trace silt (damp) |
| | | | 16 | | | |




Monitoring Well Construction Detail

# SOIL BORING AND MONITORING WELL CONSTRUCTION RECORD

HERRERA

**Monitoring Well** MW-1
**Total depth:** 51 feet
**Sheet** 2 of 3

Project name: 13.4-Acre Undeveloped Parcel, Pierce County, WA
Project number: 16-06310-011
Client: Pierce County
Location: NW Corner of Parcel. 10' east, 15' south of fence corner
HEC rep.: George Iftner
Start/End Date: 07/30/2019

Drilling Contractor: Holocene
Drilling method: Sonic
Sampling method: Bag
Ground Elevation: 379.48 feet
Air monitoring (y/n): N
Instrument(s): na

| Instrument Reading (ppm) | Sample Interval, Type | % Recovery | Depth (feet, BGS) | Water Level (feet) | Soil Group | Soil Description | Monitoring Well Construction Detail |
|---|---|---|---|---|---|---|---|
| | | | | | GP-GM | Light gray GRAVEL with sand, cobbles, trace silt (damp) | |
| NA | | | 17 | | | | |
| | 5' | 80% | 18 | | | | |
| | | | | | GP | Light gray sandy GRAVEL trace silt (moist) | |
| | | | 19 | | | | |
| | | | 20 | | GP-GM | Light gray, sandy GRAVELwith silt (damp) | Hydrated-Bentonite chips |
| | | | 21 | | | | |
| | | | 22 | | | | |
| | 5' | 70% | | | | | |
| | | | 23 | | | Thin sand lenses | |
| | | | 24 | | | | |
| | | | 25 | | | | |
| | | | 26 | | | | |
| | | | 27 | | | | |
| | 5' | 95% | | | | | |
| | | | 28 | | | | 2-inch diameter schedule 40 PVC |
| | | | 29 | | | | |
| | | | 30 | | | | |
| | | | 31 | | | | |
| | | | 32 | | | | |

# SOIL BORING AND MONITORING WELL CONSTRUCTION RECORD

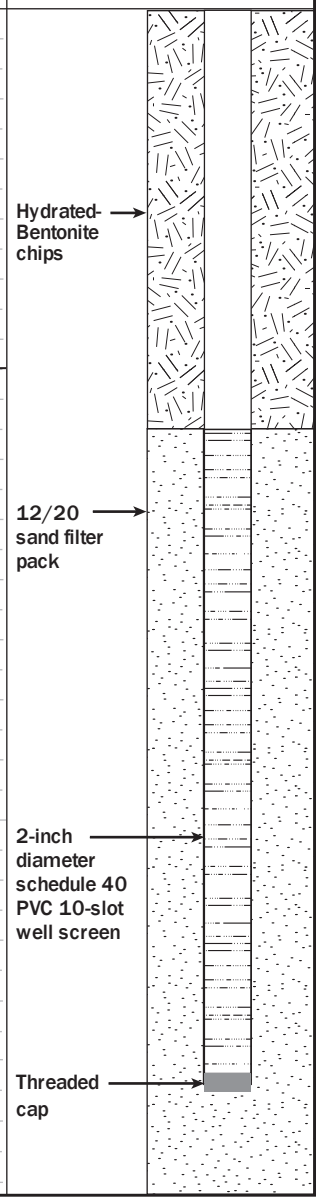
HERRERA

Monitoring Well MW-1
Total depth: 51 feet
Sheet 3 of 3

Project name: 13.4-Acre Undeveloped Parcel, Pierce County, WA
Project number: 16-06310-011
Client: Pierce County
Location: NW Corner of Parcel. 10' east, 15' south of fence corner
HEC rep.: George Iftner
Start/End Date: 07/30/2019

Drilling Contractor: Holocene
Drilling method: Sonic
Sampling method: Bag
Ground Elevation: 379.48 feet
Air monitoring (y/n): N
Instrument(s): na

| Instrument Reading (ppm) | Sample Interval, Type | % Recovery | Depth (feet, BGS) | Water Level (feet) | Soil Group | Soil Description | Monitoring Well Construction Detail |
|---|---|---|---|---|---|---|---|
| | | | | | GP-GM | Light gray GRAVEL with silt and sand (damp) | |
| NA | | | 33 | | | | |
| | 5' | 90% | 34 | | | | |
| | | | 35 | | | | |
| | | | 36 | | | | |
| | | | 37 | | | | |
| | 5' | 95% | 38 | | | | |
| | | | | | GP | Light gray sandy fine to large GRAVEL, trace silt (moist) | |
| | | | 39 | | | | |
| | | | 40 | ▼ wet | | Texture change to sandy fine to medium GRAVEL, trace silt (wet) | |
| | | | 41 | | | | |
| | | | 42 | | | | |
| | 5' | 95% | 43 | | | | |
| | | | 44 | | | | |
| | | | 45 | | | | |
| | | | 46 | | | | |
| | | | 47 | | | | |
| | 5' | 95% | 48 | | | | |
| | | | 49 | | | | |
| | | | 50 | | | | |
| | | | 51 | | | Over-drilled to 51' to place sand pack | |



# SOIL BORING AND MONITORING WELL CONSTRUCTION RECORD

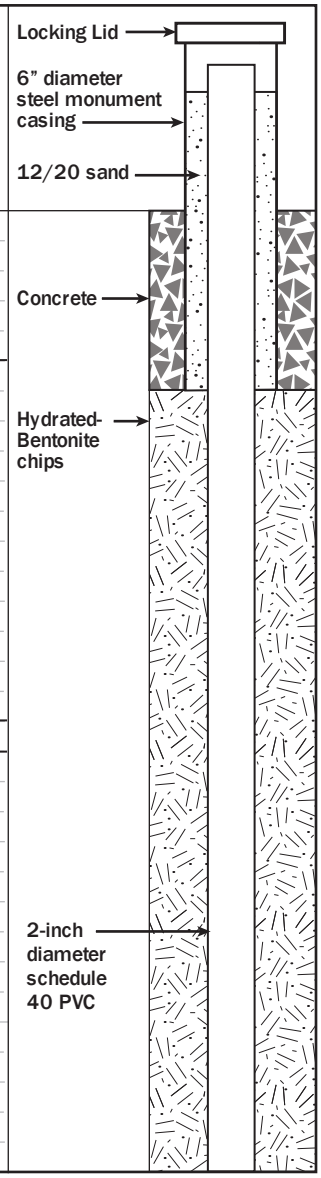
HERRERA

**Monitoring Well** MW-2
**Total depth:** 51 feet
**Sheet** 1 of 3

Project Name: 13.4-Acre Undeveloped Parcel, Pierce County, WA
Project Number: 16-06310-011
Client: Pierce County
Location: Next to North side of Excavation G
HEC Rep.: George Iftner
Start/End Date: 07/31/19

Drilling Contractor: Holocene Drilling
Drilling Method: Sonic
Sampling Method: Bag
Ground Elevation: 379.39 feet
Air Monitoring (y/n): No
Instrument(s): na

| Instrument Reading (ppm) | Sample Interval, Type | % Recovery | Depth (feet, BGS) | Water Level (feet) | Soil Group | Soil Description |
|---|---|---|---|---|---|---|
| | | | | | SM | Grass, dark brown-black silty SAND with gravel (dry) (no odors or discoloration) |
| NA | | | 1 | | | |
| | | | 2 | | | |
| | 5' Bag | 80% | 3 | | GP-GM | Tan fine to large GRAVEL with sandy, cobbles, trace silt (dry) (no odors or discoloration) (weathered recessional outwash) |
| | | | 4 | | | |
| | | | 5 | | | |
| | | | 6 | | | |
| | | | 7 | | | |
| | 5' | 60% | 8 | | | |
| | | | 9 | | GP | Gray sandy GRAVEL, trace silt (damp) |
| | | | | | GP-GM | Light gray GRAVEL with sand, cobbles, trace silt (damp) |
| | | | 10 | | | |
| | | | 11 | | | |
| | | | 12 | | | |
| | 5' | 90% | 13 | | | |
| | | | 14 | | | |
| | | | 15 | | | |
| | | | 16 | | | |




Monitoring Well Construction Detail

**Notes:**
- Well casing is surrounded by 3 concrete filled steel bollards

# SOIL BORING AND MONITORING WELL CONSTRUCTION RECORD

HERRERA

**Monitoring Well** MW-2
**Total depth:** 51 feet
**Sheet** 2 of 3

Project Name: 13.4-Acre Undeveloped Parcel, Pierce County, WA
Project Number: 16-06310-011
Client: Pierce County
Location: Next to North side of Excavation G
HEC Rep.: George Iftner
Start/End Date: 07/31/19

Drilling Contractor: Holocene Drilling
Drilling Method: Sonic
Sampling Method: Bag
Ground Elevation: 379.39 feet
Air Monitoring (y/n): No
Instrument(s): na

| Instrument Reading (ppm) | Sample Interval, Type | % Recovery | Depth (feet, BGS) | Water Level (feet) | Soil Group | Soil Description | Monitoring Well Construction Detail |
|---|---|---|---|---|---|---|---|
| | | | | | GP-GM | Light gray GRAVEL with sand, cobbles, trace silt | |
| NA | | | 17 | | | silt cobbles (damp) | |
| | | | 18 | | | | |
| | 5' | 90% | | | | Sandy GRAVEL trace silt (moist) | |
| | | | 19 | | GP | Light gray sandy GRAVEL with silt (damp) | |
| | | | 20 | | | | Hydrated-Bentonite chips |
| | | | 21 | | | | |
| | | | 22 | | | | |
| | 5' | 95% | 23 | | | | |
| | | | | | GP | Thin sand lense | |
| | | | 24 | | GP-GM | Light gray sandy GRAVEL with sandtrace silt (damp) | |
| | | | 25 | | | | |
| | | | 26 | | | | |
| | | | 27 | | | | |
| | 5' | 95% | | | | | |
| | | | 28 | | | | 2-inch diameter schedule 40 PVC |
| | | | 29 | | | | |
| | | | 30 | | | | |
| | | | 31 | | | | |
| | | | 32 | | | | |

# SOIL BORING AND MONITORING WELL CONSTRUCTION RECORD

HERRERA

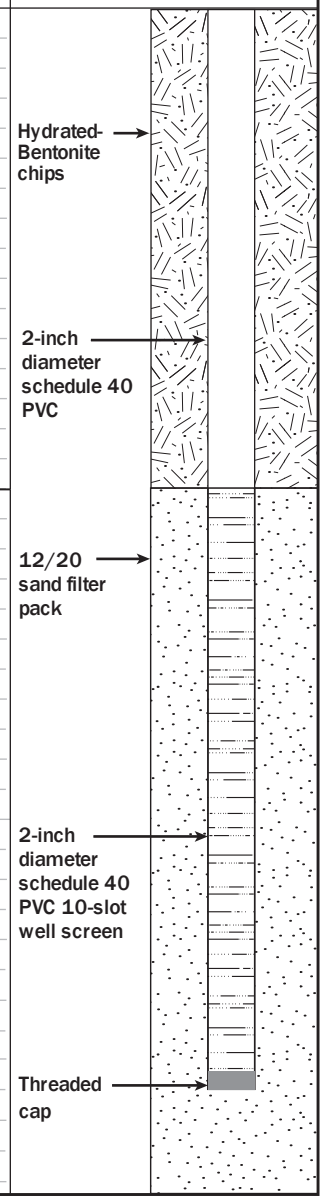
Monitoring Well MW-2
Total depth: 51 feet
Sheet 3 of 3

Project Name: 13.4-Acre Undeveloped Parcel, Pierce County, WA
Project Number: 16-06310-011
Client: Pierce County
Location: Next to North side of Excavation G
HEC Rep.: George Iftner
Start/End Date: 07/31/19
Screen:

Drilling Contractor: Holocene Drilling
Drilling Method: Sonic
Sampling Method: Bag
Ground Elevation: 379.39 feet
Air Monitoring (y/n): No
Instrument(s): na

| Instrument Reading (ppm) | Sample Interval, Type | % Recovery | Depth (feet, BGS) | Water Level (feet) | Soil Group | Soil Description |
|---|---|---|---|---|---|---|
| | | | 33 | | GP-GM | Light gray sandy GRAVEL with sand trace silt (damp) |
| NA | 5' | 95% | 34 | | | |
| | | | 35 | | | |
| | | | 36 | | | |
| | 5' | 95% | 37 | | | |
| | | | 38 | | | |
| | | | 39 | | | |
| | | | 40 | ▼ wet | | (moist) |
| | | | 41 | | GP | Light gray sandy fine to medium GRAVEL trace silt (wet) |
| | 5' | 90% | 42 | | | |
| | | | 43 | | | |
| | | | 44 | | | |
| | | | 45 | | | |
| | | | 46 | | | |
| | | | 47 | | | |
| | 5' | 90% | 48 | | | |
| | | | 49 | | | |
| | | | 50 | | | |
| | | | 51 | | | Over-drilled to 51' to place sand pack |

Monitoring Well Construction Detail



# SOIL BORING AND MONITORING WELL CONSTRUCTION RECORD

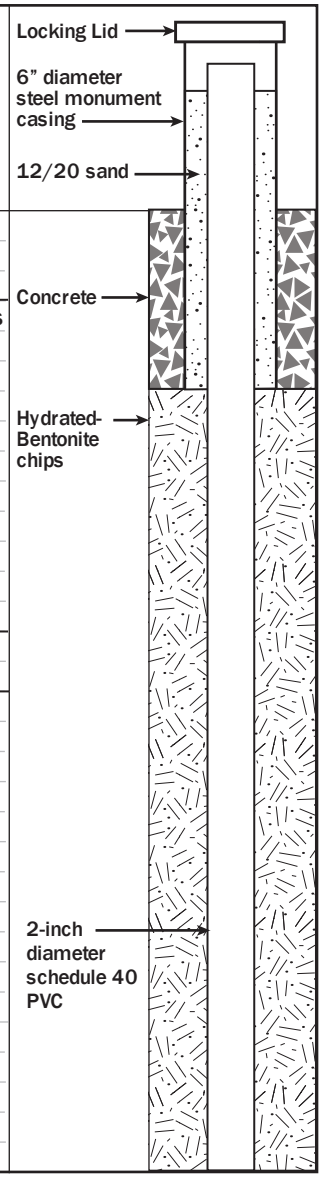
HERRERA

**Monitoring Well** MW-3
**Total depth:** 51 feet
**Sheet** 1 of 3

Project Name: 13.4-Acre Undeveloped Parcel, Pierce County, WA
Project Number: 16-06310-011
Client: Pierce County
Location: About 75' south of center of proposed bus cul-de-sac
HEC Rep.: George Iftner
Start/End Date: 08/01/19

Drilling Contractor: Holocene Drilling
Drilling Method: Sonic
Sampling Method: 5' bag
Ground Elevation: 381.85 feet
Air Monitoring (y/n): No
Instrument(s): na

| Instrument Reading (ppm) | Sample Interval, Type | % Recovery | Depth (feet, BGS) | Water Level (feet) | Soil Group | Soil Description |
|---|---|---|---|---|---|---|
| | | | | | SM | Dark brown-black silty SAND with gravel (dry) |
| NA | | | 1 | | | (no odors or discoloration) |
| | | | 2 | | GP-GM | Tan GRAVEL with sand, silt, cobbles (dry) (no odors or discoloration) (weathered recessional outwash) |
| | 5' Bag | 50% | 3 | | | |
| | | | 4 | | | |
| | | | 5 | | | |
| | | | 6 | | | |
| | | | 7 | | | |
| | | | | | GP | Tan sandy GRAVEL with silt cobbles (damp) |
| | 5' | 90% | 8 | | | (unweathered recessional outwash) |
| | | | | | GP-GM | Light gray GRAVEL with sand, trace silt, cobbles |
| | | | 9 | | | (damp) |
| | | | 10 | | | |
| | | | 11 | | | |
| | | | 12 | | | |
| | 5' | 80% | 13 | | | |
| | | | 14 | | | |
| | | | 15 | | | |
| | | | 16 | | | |




Monitoring Well Construction Detail

**Notes:**
- Well casing is surrounded by 3 concrete-filled steel bollards.

# SOIL BORING AND MONITORING WELL CONSTRUCTION RECORD

HERRERA

Monitoring Well MW-3
Total depth: 51 feet
Sheet 2 of 3

Project Name: 13.4-Acre Undeveloped Parcel, Pierce County, WA
Project Number: 16-06310-011
Client: Pierce County
Location: About 75' south of center of proposed bus cul-de-sac
HEC Rep.: George Iftner
Start/End Date: 08/01/19
Screen:

Drilling Contractor: Holocene Drilling
Drilling Method: Sonic
Sampling Method: 5' bag
Ground Elevation: 381.85 feet
Air Monitoring (y/n): No
Instrument(s): na

| Instrument Reading (ppm) | Sample Interval, Type | % Recovery | Depth (feet, BGS) | Water Level (feet) | Soil Group | Soil Description | Monitoring Well Construction Detail |
|---|---|---|---|---|---|---|---|
| | | | | | GP-GM | Light gray GRAVEL with sand, trace silt, cobbles (damp) | |
| NA | | | 17 | | | 17'-19' more fine to medium gravel then fine to | |
| | 5' | 85% | 18 | | | large gravel at 19' | |
| | | | 19 | | | | Hydrated-Bentonite chips |
| | | | 20 | | | | |
| | | | 21 | | | | |
| | | | 22 | | | | |
| | 5' | 90% | | | | | |
| | | | 23 | | GP | Approximately 1' of fine to medium GRAVEL then back to fine to large GRAVEL | |
| | | | 24 | | GP-GM | Light gray GRAVEL with sand, trace silt (damp) | |
| | | | 25 | | | | |
| | | | | | | Thin layer 1" dark black organics (peat?) | |
| | | | 26 | | | (no odor or sheen) (damp to moist) | |
| | | | 27 | | | | |
| | 5' | 85% | | | | | 2-inch diameter schedule 40 PVC |
| | | | 28 | | | | |
| | | | 29 | | | | |
| | | | 30 | | | | |
| | 5' | 85% | 31 | | | | |
| | | | 32 | | | | |

# SOIL BORING AND MONITORING WELL CONSTRUCTION RECORD

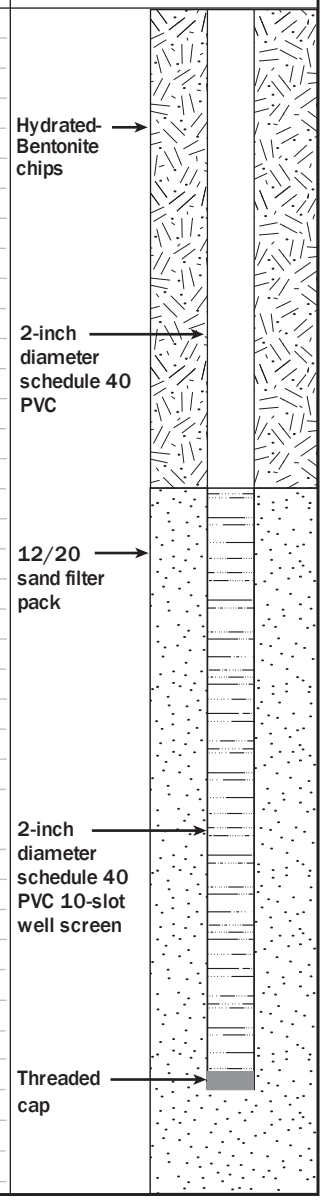
HERRERA

**Monitoring Well** MW-3
**Total depth:** 51 feet
**Sheet** 3 of 3

Project Name: 13.4-Acre Undeveloped Parcel, Pierce County, WA
Project Number: 16-06310-011
Client: Pierce County
Location: About 75' south of center of proposed bus cul-de-sac
HEC Rep.: George Iftner
Start/End Date: 08/01/19
Screen:

Drilling Contractor: Holocene Drilling
Drilling Method: Sonic
Sampling Method: 5' bag
Ground Elevation: 381.85 feet
Air Monitoring (y/n): No
Instrument(s): na

| Instrument Reading (ppm) | Sample Interval, Type | % Recovery | Depth (feet, BGS) | Water Level (feet) | Soil Group | Soil Description |
|---|---|---|---|---|---|---|
| | | | | | GP-GM | Light gray GRAVEL with sand, trace silt (damp) |
| NA | | | 33 | | | |
| | 5' | 85% | 34 | | | |
| | | | 35 | | | |
| | | | 36 | | | |
| | | | 37 | | | |
| | 5' | 70% | | | | Moist about 37' to 38' |
| | | | 38 | | | |
| | | | 39 | ▼ wet | | |
| | | | 40 | | | |
| | | | 41 | | | |
| | | | | | | Dominated by fine to medium gravel |
| | | | 42 | | | |
| | 5' | 95% | | | | |
| | | | 43 | | | |
| | | | 44 | | | |
| | | | 45 | | | |
| | | | 46 | | | |
| | | | 47 | | | |
| | 5' | 95% | 48 | | | |
| | | | 49 | | | |
| | | | 50 | | | |
| | | | 51 | | | Over-drilled to 51' to place sand pack |




Monitoring Well Construction Detail

# APPENDIX F

## Groundwater Sampling Field Notes

HERRERA

# GROUNDWATER SAMPLING LOG

**Project No.:** 16.06310-011 **Site:** Prairie Pit **Well No.:** MW-1 **Date:** 8/5/19

**Well Depth:** 50' **Screen Length:** 10' **Well Diameter:** 2" **Casing Type:** PVC

**Sampling Device** SS mega Typhoon pro submersible **Tubing Type:** 3/8" polyethylene **Water Level:** 37.68

**Measuring Point:** Top of casing. **Other Info:** Flush mount. Purged 0.4 L/min

**Sampling Personnel:** G. Effner

| | Std. U | °C | mS/cm | mg/L | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Time** | **pH** | **Temp.** | **Cond.** | **Dis.$O_2$** | **Turb.** | **[ ]Conc.** | | | **Notes** |
| 10:50 | Start purge | | | | | | Slightly turbid. gray | | |
| 10:54 | 5.90 | 13.5°C | 170 | 9.16 | | | water level | 37.71 | |
| 10:58 | 5.94 | 13.6 | 171 | 9.07 | | | less turbid | wl = | |
| 11:00 | 6.10 | 13.5 | 170 | 9.13 | | | Almost clear | 37.72 | |
| 11:04 | 6.03 | 13.5 | 171 | 9.07 | | | | | |
| 11:07 | 6.03 | 13.5 | 171 | 9.01 | | | V. slightly turbid. | | |
| 11:10 | 6.05 | 13.5 | 171 | 8.99 | | | clear ~~water level~~ | | |
| 11:13 | 6.06 | 13.5 | 171 | 8.99 | | | water level | 37.72' | |
| 11:17 | 6.06 | 13.5 | 171 | 8.98 | | | clear | | |
| 11:23 | 6.06 | 13.5 | 171 | 8.97 | | | clear | | |
| 11:30 | Sample collected | | | | | | | | |

Type of Samples Collected for Laboratory Analysis:

GX, DX, HVOCs + additives, cPAHs + Naphthalene, PCBs, Total + Dissolved metals - Field Filtered (Cd, Cr, Pb, Ni, Zn)

Well Casing Volumes:

Gal/Ft 1¼" = 0.077 1½" = 0.10 2" = 0.16 2½" = 0.24 3" = 0.37 3½" = 0.50 4" = 0.65 6" = 1.46

HERRERA

# GROUNDWATER SAMPLING LOG

Project No.: 16-06310-011 Site: Prairie pit Well No.: MW-2 Date: 8/5/19

Well Depth: 50' Screen Length: 10' Well Diameter: 2" Casing Type: PVC

Sampling Device: SS mega Typhoon Submersible pump Tubing Type: 3/8" polyethylene Water Level: 40.66

Measuring Point: Top of casing Other Info: Above-ground monument purged @ 0.4 L/min

Sampling Personnel: G. Iffner

| Time | pH (Std. u.) | Temp. (°C) | Cond. (uS/cm) | Dis.$O_2$ (mg/L) | Turb. | [ ]Conc. | | | Notes |
|---|---|---|---|---|---|---|---|---|---|
| 12:16 | Start purge | | | | | Very turbid | lt. brown. | | |
| 12:18 | 6.64 | 15.4 | 167.1 | 9.05 | | water level = 40.70 | | | |
| 12:22 | 6.57 | 15.1 | 165.7 | 8.99 | | V. slightly turbid. | | | |
| 12:27 | 6.56 | 15.1 | 165 – | 9.01 | | water level 40.69 | | | |
| 12:31 | 6.55 | 15.3 | 164 | 9.06 | | clear | | | |
| 12:34 | 6.54 | 15.2 | 163 | 9.11 | | | | | |
| 12:38 | 6.54 | 15.0 | 162 | 9.12 | | | | | |
| 12:42 | 6.51 | 14.9 | 163 | 9.12 | | clear ✓ | | | |
| 12:46 | 6.50 | 14.9 | 163 | 9.12 | | water level = 40.69 | | | |
| 12:50 | Sample collected. | | | | | | | | |

Type of Samples Collected for Laboratory Analysis:

GX/BTEX/TAME/EDB/EDC, HVOCs, DRO, cPAHs + Naphthalenes, PCBs, Total + Dis. (field filtered) metals (Cd, Cr, Pb, Ni, Zn)

Well Casing Volumes:

Gal/Ft 1¼" = 0.077 1½" = 0.10 2" = 0.16 2½" = 0.24 3" = 0.37 3½" = 0.50 4" = 0.65 6" = 1.46

HERRERA

# GROUNDWATER SAMPLING LOG

**Project No.:** 16-06310-011 **Site:** Prairie Pit **Well No.:** MW-3 **Date:** 8/5/19

**Well Depth:** 50' **Screen Length:** 10' **Well Diameter:** 2" **Casing Type:** PVC

**Sampling Device** submersible pump **Tubing Type:** polyethylene **Water Level:** 41.98

**Measuring Point:** top of casing. **Other Info:** 0.4 L/min purge rate

**Sampling Personnel:**

| Time | pH (Std. U.) | Temp. (°C) | Cond. (µS/cm) | Dis.$O_2$ (mg/L) | Turb. | [ ]Conc. | | | Notes |
|---|---|---|---|---|---|---|---|---|---|
| 13:50 | Start | purge | | | | very turbid lt. brown | | | |
| 13:54 | 6.62 | 15.0 | 167 | 8.44 | | water level = 41.99 | | | |
| 13:58 | 6.54 | 13.9 | 165 | 8.55 | | slightly turbid. | | | |
| 14:02 | 6.49 | 13.4 | 163 | 8.87 | | | | | |
| 14:06 | 6.52 | 13.7 | 161 | 8.95 | | clear. | | | |
| 14:10 | 6.51 | 13.7 | 162 | 9.10 | | water level 41.99 | | | |
| 14:15 | 6.51 | 13.8 | 162 | 9.23 | | clear | | | |
| 14:19 | 6.49 | 13.9 | 163 | 9.18 | | | | | |
| 14:23 | 6.49 | 14.0 | 163 | 9.16 | | water level = 41.99 | | | |
| 14:25 | collected | sample | | | | clear. | | | |

Type of Samples Collected for Laboratory Analysis:

GX/BTEX/TAME/EDB/EDC, etc., DO, HVOCs, PLBs, cPAHs+Naphthalene, metals (Cr, Cd, Pb, Ni, Zn) Total + Dissolved

Well Casing Volumes:

Gal/Ft 1¼" = 0.077 1½" = 0.10 2" = 0.16 2½" = 0.24 3" = 0.37 3½" = 0.50 4" = 0.65 6" = 1.46

HERRERA

# GROUNDWATER SAMPLING LOG

**Project No.:** 16-06310-01P **Site:** Prairie Pit **Well No.:** MW-1 **Date:** 11/1/19

**Well Depth:** 50' **Screen Length:** 10' **Well Diameter:** 2" **Casing Type:** PVC

**Sampling Device** Submersible Pump **Tubing Type:** Polyethylene **Water Level:** 38.64

**Measuring Point:** Top of Casing **Other Info:** Flow rate 0.4 L/min.

Flush mount monument, No odors or sheen

**Sampling Personnel:** George Ifther

| Time | pH (S.U.) | Temp. (°C) | Cond. (uS/cm) | Dis.$O_2$ (mg/L) | Turb. (NTU) | ~~Flow~~ Conc. (0.4 L/min) | WL | | Notes |
|---|---|---|---|---|---|---|---|---|---|
| 10:25 | Start purge | | | | 512 | 0.4 | | | ~~Slightly~~ Turbid. |
| 10:27 | 6.55 | 12.0 | 174.9 | 8.85 | 310 | 0.4 | 38.65 | | Turbid. |
| 10:32 | 6.42 | 12.3 | 173 | 8.92 | 260 | " | 38.65 | | Slightly Turbid. |
| 10:36 | 6.48 | 12.3 | 173.1 | 9.12 | 131 | 0.4 | 38.65 | | Clearer |
| 10:43 | 6.46 | 12.3 | 172.8 | 8.99 | 56 | 0.4 | 38.65 | | Nearly clear |
| 10:48 | 6.51 | 11.9 | 172.4 | 9.01 | 39 | " | 38.65 | | " |
| 11:00 | 6.47 | 12.1 | 171.5 | 9.17 | 34 | 0.4 | 38.65 | | " |
| 11:05 | 6.42 | 12.2 | 172.1 | 9.06 | 20 | 0.4 | 38.65 | | |
| 11:09 | 6.41 | 12.2 | 172.0 | 9.10 | 7.9 | 0.4 | 38.65 | | clear |
| 11:10 | Sample collected ✓ | | | | | | | | |

Type of Samples Collected for Laboratory Analysis:

Dx, 6x, BTEX, EDC cPAHs + Naphthalenes, Total + Diss metals PCBs

Well Casing Volumes:

Gal/Ft 1¼" = 0.077 1½" = 0.10 2" = 0.16 2½" = 0.24 3" = 0.37 3½" = 0.50 4" = 0.65 6" = 1.46

HERRERA

# GROUNDWATER SAMPLING LOG

**Project No.:** 16-06310-01C **Site:** Prairie Pit **Well No.:** MW-2 **Date:** 11/1/19

**Well Depth:** 50' **Screen Length:** 10' **Well Diameter:** 2" **Casing Type:** PVC

**Sampling Device** Submersible Pump **Tubing Type:** Polyethylene **Water Level:** 41.58'

**Measuring Point:** Top of Casing **Other Info:** Flow Rate 0.4 L/min.

Above ground monument. No odors or sheen

**Sampling Personnel:** George Ifft

| Time | pH (S.U.) | Temp. (°C) | Cond. (uS/cm) | Dis.$O_2$ (mg/L) | Turb. (NTU) | ~~Flow Cont.~~ Flow | WL | | Notes |
|---|---|---|---|---|---|---|---|---|---|
| 12:00 | Start | purge | | | 200+ | 0.4 L/min | | Very turbid. | |
| 12:03 | 6.48 | 12.2 | 164 | 9.08 | 110 | " | 41.59 | | |
| 12:07 | 6.49 | 12.2 | 164.1 | 9.10 | 101 | 0.5 L/min | 41.59 | | |
| 12:11 | 6.48 | 12.2 | 163.7 | 9.14 | 71 | 0.4 | 41.59 | | |
| 12:15 | 6.48 | 12.3 | 163.6 | 9.15 | 19.5 | " | 41.59 | | Nearly clear |
| 12:20 | 6.49 | 12.2 | 163 | 9.17 | 7.7 | 0.4 | 41.59 | | clear |
| 12:25 | 6.47 | 12.1 | 163.7 | 9.21 | 6.8 | " | 41.59 | | clear |
| ~~12:29~~ | ~~Stop~~ | ~~pump~~ | ~~turn~~ | ~~off~~ | | ~~0~~ | | | |
| 12:29 | 6.44 | 12.1 | 163.8 | 9.16 | (6.7) | 0.4 | 41.59 | | Clear |
| 12:30 | Sample collected ✓ | | | | | | | | |

Type of Samples Collected for Laboratory Analysis:

DX, GX, BTEX, EDC cPAHs+Naphthalenes, PCBS, Total+Diss. metals

Well Casing Volumes:

Gal/Ft 1¼" = 0.077 1½" = 0.10 2" = 0.16 2½" = 0.24 3" = 0.37 3½" = 0.50 4" = 0.65 6" = 1.46

HERRERA

# GROUNDWATER SAMPLING LOG

**Project No.:** 60630-011 **Site:** Prairie Pit **Well No.:** MW-3 **Date:** 11/1/19

**Well Depth:** 50' **Screen Length:** 10' **Well Diameter:** 2" **Casing Type:** PVC

**Sampling Device** Submersible pump **Tubing Type:** Polyethylene **Water Level:** 42.91

**Measuring Point:** Top of Casing **Other Info:** Flow rate 0.4 L/min.

Above ground monument, No odors or sheen.

**Sampling Personnel:** G Iftner

| | S.U. | °C | uS/cm | mg/L | NTU | flow | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Time** | **pH** | **Temp.** | **Cond.** | **Dis.$O_2$** | **Turb.** | ~~**Conc.**~~ | **WL** | | **Notes** |
| 13:04 | Start purge | | | | | | | | |
| 13:06 | 6.88 | 11.6 | 178 | 6.82 | ~~800~~ + | 0.4 L/min | 43.94 | very | turbid. |
| 13:11 | 6.71 | 12.1 | 170 | 8.51 | 750 | 0.4 | 43.94 | | " |
| 13:18 | 6.68 | 12.1 | 167 | 9.05 | 190 | 0.41 | 43.94 | | " |
| 13:24 | 6.67 | 12.2 | 166 | ~~9.11~~ 9.09 | 66 | 0.4 | 43.94 | | Nearly clear |
| 13:28 | 6.61 | 12.2 | 165 | 9.12 | 27.6 | 0.4 | 43.94 | | " |
| 13:34 | 6.59 | 12.2 | 165 | 9.13 | 6.6 | " | 43.94 | | clear |
| 13:39 | 6.55 | 12.2 | 165 | 9.19 | 5.9 | 0.4 | | | " |
| 13:40 | Sample collected ✓ | | | | | | | | |

Type of Samples Collected for Laboratory Analysis:

DO, GX, BTEX, EDC cPAHs, + Naphthalenes, PCBs, Total + Diss. metals

Well Casing Volumes:

Gal/Ft 1¼" = 0.077 1½" = 0.10 2" = 0.16 2½" = 0.24 3" = 0.37 3½" = 0.50 4" = 0.65 6" = 1.46

# APPENDIX G

# Laboratory Analytical Data

# Table G1 – Total cPAH Calculations Using Adjusted Toxicity Equivalency Factors

**Ditch-2-0**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL |
|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.0036 | 0.00036 | 0.007 | 0.0036 |
| Chrysene | 0.01 | 0.0036 | 0.000036 | 0.007 | 0.0036 |
| Benzo[b]fluoranthene | 0.1 | 0.0036 | 0.00036 | 0.007 | 0.0036 |
| Benzo[k]fluoranthene | 0.1 | 0.0036 | 0.00036 | 0.007 | 0.0036 |
| Benzo[a]pyrene | 1 | 0.0036 | 0.0036 | 0.007 | 0.0036 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.0036 | 0.00036 | 0.007 | 0.0036 |
| Dibenz[a,h]anthracene | 0.1 | 0.0036 | 0.00036 | 0.007 | 0.0036 |
| **Total cPAHs** | | | **0.005** | | |

**Ditch-3-0**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL |
|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| Chrysene | 0.01 | **0.0080** | 0.00008 | | |
| Benzo[b]fluoranthene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| Benzo[k]fluoranthene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| Benzo[a]pyrene | 1 | 0.0038 | 0.0038 | 0.008 | 0.0038 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| Dibenz[a,h]anthracene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| **Total cPAHs** | | | **0.006** | | |

**Ditch-4-0**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL |
|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| Chrysene | 0.01 | 0.0038 | 0.000038 | 0.008 | 0.0038 |
| Benzo[b]fluoranthene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| Benzo[k]fluoranthene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| Benzo[a]pyrene | 1 | 0.0038 | 0.0038 | 0.008 | 0.0038 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| Dibenz[a,h]anthracene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| **Total cPAHs** | | | **0.006** | | |

**Ditch-5B-1**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL |
|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.0195 | 0.00195 | 0.039 | 0.0195 |
| Chrysene | 0.01 | 0.0195 | 0.000195 | 0.039 | 0.0195 |
| Benzo[b]fluoranthene | 0.1 | 0.0195 | 0.00195 | 0.039 | 0.0195 |
| Benzo[k]fluoranthene | 0.1 | 0.0195 | 0.00195 | 0.039 | 0.0195 |
| Benzo[a]pyrene | 1 | 0.0195 | 0.0195 | 0.039 | 0.0195 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.0195 | 0.00195 | 0.039 | 0.0195 |
| Dibenz[a,h]anthracene | 0.1 | 0.0195 | 0.00195 | 0.039 | 0.0195 |
| **Total cPAHs** | | | **0.029** | | |

**Ditch-6-0**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL |
|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.02115 | 0.002115 | 0.042 | 0.02115 |
| Chrysene | 0.01 | 0.02115 | 0.0002115 | 0.042 | 0.02115 |
| Benzo[b]fluoranthene | 0.1 | 0.02115 | 0.002115 | 0.042 | 0.02115 |
| Benzo[k]fluoranthene | 0.1 | 0.02115 | 0.002115 | 0.042 | 0.02115 |
| Benzo[a]pyrene | 1 | 0.02115 | 0.02115 | 0.042 | 0.02115 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.02115 | 0.002115 | 0.042 | 0.02115 |
| Dibenz[a,h]anthracene | 0.1 | 0.02115 | 0.002115 | 0.042 | 0.02115 |
| **Total cPAHs** | | | **0.032** | | |

**TP-A-3**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL |
|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.00375 | 0.000375 | 0.008 | 0.00375 |
| Chrysene | 0.01 | **0.013** | 0.00013 | | |
| Benzo[b]fluoranthene | 0.1 | **0.011** | 0.0011 | | |
| Benzo[k]fluoranthene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| Benzo[a]pyrene | 1 | 0.0038 | 0.0038 | 0.008 | 0.0038 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| Dibenz[a,h]anthracene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| **Total cPAHs** | | | **0.007** | | |

**TP-B-4**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL |
|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| Chrysene | 0.01 | 0.0038 | 0.000038 | 0.008 | 0.0038 |
| Benzo[b]fluoranthene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| Benzo[k]fluoranthene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| Benzo[a]pyrene | 1 | 0.0038 | 0.0038 | 0.008 | 0.0038 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| Dibenz[a,h]anthracene | 0.1 | 0.0038 | 0.00038 | 0.008 | 0.0038 |
| **Total cPAHs** | | | **0.006** | | |

# Table G1 - Total cPAH Calculations Using Adjusted Toxicity Equivalency Factors

**TP-D-1.5**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.0039 | 0.00039 | 0.008 | | 0.0039 |
| Chrysene | 0.01 | **0.009** | 0.000092 | | | |
| Benzo[b]fluoranthene | 0.1 | **0.010** | 0.00098 | | | |
| Benzo[k]fluoranthene | 0.1 | 0.0039 | 0.00039 | 0.008 | | 0.0039 |
| Benzo[a]pyrene | 1 | 0.0039 | 0.0039 | 0.008 | | 0.0039 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.0039 | 0.00039 | 0.008 | | 0.0039 |
| Dibenz[a,h]anthracene | 0.1 | 0.0039 | 0.00039 | 0.008 | | 0.0039 |
| **Total cPAHs** | | | **0.007** | | | |

**TP-E-2**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.0038 | 0.00038 | 0.008 | | 0.0038 |
| Chrysene | 0.01 | **0.033** | 0.00033 | | | |
| Benzo[b]fluoranthene | 0.1 | **0.030** | 0.003 | | | |
| Benzo[k]fluoranthene | 0.1 | 0.0038 | 0.00038 | 0.008 | | 0.0038 |
| Benzo[a]pyrene | 1 | 0.0038 | 0.0038 | 0.008 | | 0.0038 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | **0.013** | 0.0013 | | | |
| Dibenz[a,h]anthracene | 0.1 | 0.0038 | 0.00038 | 0.008 | | 0.0038 |
| **Total cPAHs** | | | **0.010** | | | |

**TP-F-2.5**

| Analyte | TEF | Results | TEF-adjusted |
|---|---|---|---|
| Benzo[a]anthracene | 0.1 | **0.067** | 0.0067 |
| Chrysene | 0.01 | **0.250** | 0.0025 |
| Benzo[b]fluoranthene | 0.1 | **0.110** | 0.011 |
| Benzo[k]fluoranthene | 0.1 | **0.083** | 0.0083 |
| Benzo[a]pyrene | 1 | **0.290** | 0.29 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | **0.110** | 0.011 |
| Dibenz[a,h]anthracene | 0.1 | **0.028** | 0.0028 |
| **Total cPAHs** | | | **0.332** |

**TP-K-1**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.0037 | 0.00037 | 0.007 | | 0.0037 |
| Chrysene | 0.01 | **0.020** | 0.0002 | | | |
| Benzo[b]fluoranthene | 0.1 | **0.020** | 0.002 | | | |
| Benzo[k]fluoranthene | 0.1 | 0.0037 | 0.00037 | 0.007 | | 0.0037 |
| Benzo[a]pyrene | 1 | 0.0037 | 0.0037 | 0.007 | | 0.0037 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | **0.012** | 0.0012 | | | |
| Dibenz[a,h]anthracene | 0.1 | 0.0037 | 0.00037 | 0.007 | | 0.0037 |
| **Total cPAHs** | | | **0.008** | | | |

**TP-L-1**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.02505 | 0.002505 | 0.050 | | 0.02505 |
| Chrysene | 0.01 | 0.02505 | 0.0002505 | 0.050 | | 0.02505 |
| Benzo[b]fluoranthene | 0.1 | 0.02505 | 0.002505 | 0.050 | | 0.02505 |
| Benzo[k]fluoranthene | 0.1 | 0.02505 | 0.002505 | 0.050 | | 0.02505 |
| Benzo[a]pyrene | 1 | 0.02505 | 0.02505 | 0.050 | | 0.02505 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.02505 | 0.002505 | 0.050 | | 0.02505 |
| Dibenz[a,h]anthracene | 0.1 | 0.02505 | 0.002505 | 0.050 | | 0.02505 |
| **Total cPAHs** | | | **0.038** | | | |

**Exc-E1-4**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.0225 | 0.00225 | 0.045 | | 0.0225 |
| Chrysene | 0.01 | 0.0225 | 0.000225 | 0.045 | | 0.0225 |
| Benzo[b]fluoranthene | 0.1 | 0.0225 | 0.00225 | 0.045 | | 0.0225 |
| Benzo[k]fluoranthene | 0.1 | 0.0225 | 0.00225 | 0.045 | | 0.0225 |
| Benzo[a]pyrene | 1 | 0.0225 | 0.0225 | 0.045 | | 0.0225 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.0225 | 0.00225 | 0.045 | | 0.0225 |
| Dibenz[a,h]anthracene | 0.1 | 0.0225 | 0.00225 | 0.045 | | 0.0225 |
| **Total cPAHs** | | | **0.034** | | | |

**Exc-E2C-2.5**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Chrysene | 0.01 | 0.002 | 0.00002 | 0.004 | | 0.002 |
| Benzo[b]fluoranthene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Benzo[k]fluoranthene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Benzo[a]pyrene | 1 | 0.002 | 0.002 | 0.004 | | 0.002 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Dibenz[a,h]anthracene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| **Total cPAHs** | | | **0.003** | | | |

# Table G1 - Total cPAH Calculations Using Adjusted Toxicity Equivalency Factors

**Exc-E3C-1.5**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.35 | 0.035 | 0.700 | | 0.35 |
| Chrysene | 0.01 | 0.35 | 0.0035 | 0.700 | | 0.35 |
| Benzo[b]fluoranthene | 0.1 | 0.35 | 0.035 | 0.700 | | 0.35 |
| Benzo[k]fluoranthene | 0.1 | 0.35 | 0.035 | 0.700 | | 0.35 |
| Benzo[a]pyrene | 1 | 0.35 | 0.35 | 0.700 | | 0.35 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.35 | 0.035 | 0.700 | | 0.35 |
| Dibenz[a,h]anthracene | 0.1 | 0.35 | 0.035 | 0.700 | | 0.35 |
| **Total cPAHs** | | | **0.529** | | | |

**Exc-E3C2-2**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.018 | 0.0018 | 0.036 | | 0.018 |
| Chrysene | 0.01 | 0.018 | 0.00018 | 0.036 | | 0.018 |
| Benzo[b]fluoranthene | 0.1 | 0.018 | 0.0018 | 0.036 | | 0.018 |
| Benzo[k]fluoranthene | 0.1 | 0.018 | 0.0018 | 0.036 | | 0.018 |
| Benzo[a]pyrene | 1 | 0.018 | 0.018 | 0.036 | | 0.018 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.018 | 0.0018 | 0.036 | | 0.018 |
| Dibenz[a,h]anthracene | 0.1 | 0.018 | 0.0018 | 0.036 | | 0.018 |
| **Total cPAHs** | | | **0.027** | | | |

**Exc-F1-0**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.0205 | 0.00205 | 0.041 | | 0.0205 |
| Chrysene | 0.01 | 0.0205 | 0.000205 | 0.041 | | 0.0205 |
| Benzo[b]fluoranthene | 0.1 | 0.0205 | 0.00205 | 0.041 | | 0.0205 |
| Benzo[k]fluoranthene | 0.1 | 0.0205 | 0.00205 | 0.041 | | 0.0205 |
| Benzo[a]pyrene | 1 | 0.0205 | 0.0205 | 0.041 | | 0.0205 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.0205 | 0.00205 | 0.041 | | 0.0205 |
| Dibenz[a,h]anthracene | 0.1 | 0.0205 | 0.00205 | 0.041 | | 0.0205 |
| **Total cPAHs** | | | **0.031** | | | |

**Exc-F2B-1.5**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.0215 | 0.00215 | 0.043 | | 0.0215 |
| Chrysene | 0.01 | 0.0215 | 0.000215 | 0.043 | | 0.0215 |
| Benzo[b]fluoranthene | 0.1 | 0.0215 | 0.00215 | 0.043 | | 0.0215 |
| Benzo[k]fluoranthene | 0.1 | 0.0215 | 0.00215 | 0.043 | | 0.0215 |
| Benzo[a]pyrene | 1 | 0.0215 | 0.0215 | 0.043 | | 0.0215 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.0215 | 0.00215 | 0.043 | | 0.0215 |
| Dibenz[a,h]anthracene | 0.1 | 0.0215 | 0.00215 | 0.043 | | 0.0215 |
| **Total cPAHs** | | | **0.032** | | | |

**Exc-G1-1**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.01935 | 0.001935 | 0.039 | | 0.01935 |
| Chrysene | 0.01 | 0.01935 | 0.0001935 | 0.039 | | 0.01935 |
| Benzo[b]fluoranthene | 0.1 | 0.01935 | 0.001935 | 0.039 | | 0.01935 |
| Benzo[k]fluoranthene | 0.1 | 0.01935 | 0.001935 | 0.039 | | 0.01935 |
| Benzo[a]pyrene | 1 | 0.01935 | 0.01935 | 0.039 | | 0.01935 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.01935 | 0.001935 | 0.039 | | 0.01935 |
| Dibenz[a,h]anthracene | 0.1 | 0.01935 | 0.001935 | 0.039 | | 0.01935 |
| **Total cPAHs** | | | **0.029** | | | |

**Exc-G2B-1**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Chrysene | 0.01 | 0.002 | 0.00002 | 0.004 | | 0.002 |
| Benzo[b]fluoranthene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Benzo[k]fluoranthene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Benzo[a]pyrene | 1 | 0.002 | 0.002 | 0.004 | | 0.002 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Dibenz[a,h]anthracene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| **Total cPAHs** | | | **0.003** | | | |

**Exc-G3-2.5**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.01935 | 0.001935 | 0.039 | | 0.01935 |
| Chrysene | 0.01 | 0.01935 | 0.0001935 | 0.039 | | 0.01935 |
| Benzo[b]fluoranthene | 0.1 | 0.01935 | 0.001935 | 0.039 | | 0.01935 |
| Benzo[k]fluoranthene | 0.1 | 0.01935 | 0.001935 | 0.039 | | 0.01935 |
| Benzo[a]pyrene | 1 | 0.01935 | 0.01935 | 0.039 | | 0.01935 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.01935 | 0.001935 | 0.039 | | 0.01935 |
| Dibenz[a,h]anthracene | 0.1 | 0.01935 | 0.001935 | 0.039 | | 0.01935 |
| **Total cPAHs** | | | **0.029** | | | |

# Table G1 - Total cPAH Calculations Using Adjusted Toxicity Equivalency Factors

**Exc-G4-1**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.0208 | 0.00208 | 0.042 | | 0.0208 |
| Chrysene | 0.01 | 0.0208 | 0.000208 | 0.042 | | 0.0208 |
| Benzo[b]fluoranthene | 0.1 | 0.0208 | 0.00208 | 0.042 | | 0.0208 |
| Benzo[k]fluoranthene | 0.1 | 0.0208 | 0.00208 | 0.042 | | 0.0208 |
| Benzo[a]pyrene | 1 | 0.0208 | 0.0208 | 0.042 | | 0.0208 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.0208 | 0.00208 | 0.042 | | 0.0208 |
| Dibenz[a,h]anthracene | 0.1 | 0.0208 | 0.00208 | 0.042 | | 0.0208 |
| **Total cPAHs** | | | **0.031** | | | |

**Exc-G5-1**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.02 | 0.002 | 0.040 | | 0.02 |
| Chrysene | 0.01 | 0.02 | 0.0002 | 0.040 | | 0.02 |
| Benzo[b]fluoranthene | 0.1 | 0.02 | 0.002 | 0.040 | | 0.02 |
| Benzo[k]fluoranthene | 0.1 | 0.02 | 0.002 | 0.040 | | 0.02 |
| Benzo[a]pyrene | 1 | 0.02 | 0.02 | 0.040 | | 0.02 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.02 | 0.002 | 0.040 | | 0.02 |
| Dibenz[a,h]anthracene | 0.1 | 0.02 | 0.002 | 0.040 | | 0.02 |
| **Total cPAHs** | | | **0.030** | | | |

**Exc-G6B-3**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.35 | 0.035 | 0.700 | | 0.35 |
| Chrysene | 0.01 | 0.35 | 0.0035 | 0.700 | | 0.35 |
| Benzo[b]fluoranthene | 0.1 | 0.35 | 0.035 | 0.700 | | 0.35 |
| Benzo[k]fluoranthene | 0.1 | 0.35 | 0.035 | 0.700 | | 0.35 |
| Benzo[a]pyrene | 1 | 0.35 | 0.35 | 0.700 | | 0.35 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.35 | 0.035 | 0.700 | | 0.35 |
| Dibenz[a,h]anthracene | 0.1 | 0.35 | 0.035 | 0.700 | | 0.35 |
| **Total cPAHs** | | | **0.529** | | | |

**Exc-G6B2-4**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.018 | 0.0018 | 0.036 | | 0.018 |
| Chrysene | 0.01 | 0.018 | 0.00018 | 0.036 | | 0.018 |
| Benzo[b]fluoranthene | 0.1 | 0.018 | 0.0018 | 0.036 | | 0.018 |
| Benzo[k]fluoranthene | 0.1 | 0.018 | 0.0018 | 0.036 | | 0.018 |
| Benzo[a]pyrene | 1 | 0.018 | 0.018 | 0.036 | | 0.018 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.018 | 0.0018 | 0.036 | | 0.018 |
| Dibenz[a,h]anthracene | 0.1 | 0.018 | 0.0018 | 0.036 | | 0.018 |
| **Total cPAHs** | | | **0.027** | | | |

**Exc-G7-1**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.02065 | 0.002065 | 0.041 | | 0.02065 |
| Chrysene | 0.01 | 0.02065 | 0.0002065 | 0.041 | | 0.02065 |
| Benzo[b]fluoranthene | 0.1 | 0.02065 | 0.002065 | 0.041 | | 0.02065 |
| Benzo[k]fluoranthene | 0.1 | 0.02065 | 0.002065 | 0.041 | | 0.02065 |
| Benzo[a]pyrene | 1 | 0.02065 | 0.02065 | 0.041 | | 0.02065 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.02065 | 0.002065 | 0.041 | | 0.02065 |
| Dibenz[a,h]anthracene | 0.1 | 0.02065 | 0.002065 | 0.041 | | 0.02065 |
| **Total cPAHs** | | | **0.031** | | | |

**Exc-H1B-1.5**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.021 | 0.0021 | 0.042 | | 0.021 |
| Chrysene | 0.01 | 0.021 | 0.00021 | 0.042 | | 0.021 |
| Benzo[b]fluoranthene | 0.1 | 0.021 | 0.0021 | 0.042 | | 0.021 |
| Benzo[k]fluoranthene | 0.1 | 0.021 | 0.0021 | 0.042 | | 0.021 |
| Benzo[a]pyrene | 1 | 0.021 | 0.021 | 0.042 | | 0.021 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.021 | 0.0021 | 0.042 | | 0.021 |
| Dibenz[a,h]anthracene | 0.1 | 0.021 | 0.0021 | 0.042 | | 0.021 |
| **Total cPAHs** | | | **0.032** | | | |

**Exc-H2-1**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.0186 | 0.00186 | 0.037 | | 0.0186 |
| Chrysene | 0.01 | 0.0186 | 0.000186 | 0.037 | | 0.0186 |
| Benzo[b]fluoranthene | 0.1 | 0.0186 | 0.00186 | 0.037 | | 0.0186 |
| Benzo[k]fluoranthene | 0.1 | 0.0186 | 0.00186 | 0.037 | | 0.0186 |
| Benzo[a]pyrene | 1 | 0.0186 | 0.0186 | 0.037 | | 0.0186 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.0186 | 0.00186 | 0.037 | | 0.0186 |
| Dibenz[a,h]anthracene | 0.1 | 0.0186 | 0.00186 | 0.037 | | 0.0186 |
| **Total cPAHs** | | | **0.028** | | | |

# Table G1 - Total cPAH Calculations Using Adjusted Toxicity Equivalency Factors

**Exc-H3-1**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL |
|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.0201 | 0.00201 | 0.040 | 0.0201 |
| Chrysene | 0.01 | 0.0201 | 0.000201 | 0.040 | 0.0201 |
| Benzo[b]fluoranthene | 0.1 | 0.0201 | 0.00201 | 0.040 | 0.0201 |
| Benzo[k]fluoranthene | 0.1 | 0.0201 | 0.00201 | 0.040 | 0.0201 |
| Benzo[a]pyrene | 1 | 0.0201 | 0.0201 | 0.040 | 0.0201 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.0201 | 0.00201 | 0.040 | 0.0201 |
| Dibenz[a,h]anthracene | 0.1 | 0.0201 | 0.00201 | 0.040 | 0.0201 |
| **Total cPAHs** | | | **0.030** | | |

**Exc-H4-1**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL |
|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.018 | 0.0018 | 0.036 | 0.018 |
| Chrysene | 0.01 | 0.018 | 0.00018 | 0.036 | 0.018 |
| Benzo[b]fluoranthene | 0.1 | 0.018 | 0.0018 | 0.036 | 0.018 |
| Benzo[k]fluoranthene | 0.1 | 0.018 | 0.0018 | 0.036 | 0.018 |
| Benzo[a]pyrene | 1 | 0.018 | 0.018 | 0.036 | 0.018 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.018 | 0.0018 | 0.036 | 0.018 |
| Dibenz[a,h]anthracene | 0.1 | 0.018 | 0.0018 | 0.036 | 0.018 |
| **Total cPAHs** | | | **0.027** | | |

**Exc-H5C-5**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL |
|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.019 | 0.0019 | 0.038 | 0.019 |
| Chrysene | 0.01 | 0.019 | 0.00019 | 0.038 | 0.019 |
| Benzo[b]fluoranthene | 0.1 | 0.019 | 0.0019 | 0.038 | 0.019 |
| Benzo[k]fluoranthene | 0.1 | 0.019 | 0.0019 | 0.038 | 0.019 |
| Benzo[a]pyrene | 1 | 0.019 | 0.019 | 0.038 | 0.019 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.019 | 0.0019 | 0.038 | 0.019 |
| Dibenz[a,h]anthracene | 0.1 | 0.019 | 0.0019 | 0.038 | 0.019 |
| **Total cPAHs** | | | **0.029** | | |

**Exc-H6-6**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL |
|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.022 | 0.0022 | 0.044 | 0.022 |
| Chrysene | 0.01 | 0.022 | 0.00022 | 0.044 | 0.022 |
| Benzo[b]fluoranthene | 0.1 | 0.022 | 0.0022 | 0.044 | 0.022 |
| Benzo[k]fluoranthene | 0.1 | 0.022 | 0.0022 | 0.044 | 0.022 |
| Benzo[a]pyrene | 1 | 0.022 | 0.022 | 0.044 | 0.022 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.022 | 0.0022 | 0.044 | 0.022 |
| Dibenz[a,h]anthracene | 0.1 | 0.022 | 0.0022 | 0.044 | 0.022 |
| **Total cPAHs** | | | **0.033** | | |

**Exc-H7-8**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL |
|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.021 | 0.0021 | 0.042 | 0.021 |
| Chrysene | 0.01 | 0.021 | 0.00021 | 0.042 | 0.021 |
| Benzo[b]fluoranthene | 0.1 | 0.021 | 0.0021 | 0.042 | 0.021 |
| Benzo[k]fluoranthene | 0.1 | 0.021 | 0.0021 | 0.042 | 0.021 |
| Benzo[a]pyrene | 1 | 0.021 | 0.021 | 0.042 | 0.021 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.021 | 0.0021 | 0.042 | 0.021 |
| Dibenz[a,h]anthracene | 0.1 | 0.021 | 0.0021 | 0.042 | 0.021 |
| **Total cPAHs** | | | **0.032** | | |

**Exc-H8C-5**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL |
|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.35 | 0.035 | 0.700 | 0.35 |
| Chrysene | 0.01 | 0.35 | 0.0035 | 0.700 | 0.35 |
| Benzo[b]fluoranthene | 0.1 | 0.35 | 0.035 | 0.700 | 0.35 |
| Benzo[k]fluoranthene | 0.1 | 0.35 | 0.035 | 0.700 | 0.35 |
| Benzo[a]pyrene | 1 | 0.35 | 0.35 | 0.700 | 0.35 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.35 | 0.035 | 0.700 | 0.35 |
| Dibenz[a,h]anthracene | 0.1 | 0.35 | 0.035 | 0.700 | 0.35 |
| **Total cPAHs** | | | **0.529** | | |

**Exc-H8C2-5**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL |
|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.018 | 0.0018 | 0.036 | 0.018 |
| Chrysene | 0.01 | 0.018 | 0.00018 | 0.036 | 0.018 |
| Benzo[b]fluoranthene | 0.1 | 0.018 | 0.0018 | 0.036 | 0.018 |
| Benzo[k]fluoranthene | 0.1 | 0.018 | 0.0018 | 0.036 | 0.018 |
| Benzo[a]pyrene | 1 | 0.018 | 0.018 | 0.036 | 0.018 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.018 | 0.0018 | 0.036 | 0.018 |
| Dibenz[a,h]anthracene | 0.1 | 0.018 | 0.0018 | 0.036 | 0.018 |
| **Total cPAHs** | | | **0.027** | | |

# Table G1 - Total cPAH Calculations Using Adjusted Toxicity Equivalency Factors

**Exc-H9C-5**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Chrysene | 0.01 | 0.002 | 0.00002 | 0.004 | | 0.002 |
| Benzo[b]fluoranthene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Benzo[k]fluoranthene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Benzo[a]pyrene | 1 | 0.002 | 0.002 | 0.004 | | 0.002 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Dibenz[a,h]anthracene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| **Total cPAHs** | | | **0.003** | | | |

**Exc-H10-2**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Chrysene | 0.01 | 0.002 | 0.00002 | 0.004 | | 0.002 |
| Benzo[b]fluoranthene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Benzo[k]fluoranthene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Benzo[a]pyrene | 1 | 0.002 | 0.002 | 0.004 | | 0.002 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Dibenz[a,h]anthracene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| **Total cPAHs** | | | **0.003** | | | |

**Exc-H11-1**

| Analyte | TEF | Results | TEF-adjusted | Result if ND (non detect) | Adjusted level @1/2 PQL | |
|---|---|---|---|---|---|---|
| Benzo[a]anthracene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Chrysene | 0.01 | 0.002 | 0.00002 | 0.004 | | 0.002 |
| Benzo[b]fluoranthene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Benzo[k]fluoranthene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Benzo[a]pyrene | 1 | 0.002 | 0.002 | 0.004 | | 0.002 |
| Indeno[1,2,3-c,d]pyrene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| Dibenz[a,h]anthracene | 0.1 | 0.002 | 0.0002 | 0.004 | | 0.002 |
| **Total cPAHs** | | | **0.003** | | | |

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

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George Iftner
Herrera Environmental Consultants, Inc.
2200 6th Avenue, Suite 1100
Seattle, WA 98121

Re: Analytical Data for Project 16-06310-011
Laboratory Reference No. 1906-324

Dear George:

Enclosed are the analytical results and associated quality control data for samples submitted on June 28, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures



This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**Case Narrative**

Samples were collected on June 27, 2019 and received by the laboratory on June 28, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**HYDROCARBON IDENTIFICATION**
**NWTPH-HCID**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-A-3** | | | | | |
| Laboratory ID: | 06-324-01 | | | | | |
| Gasoline Range Organics | **ND** | 23 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Diesel Range Organics | **ND** | 57 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Lube Oil Range Organics | **Detected** | 110 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***94*** | ***50-150*** | | | | |
| **Client ID:** | **TP-B-4** | | | | | |
| Laboratory ID: | 06-324-02 | | | | | |
| Gasoline Range Organics | **ND** | 23 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Diesel Range Organics | **ND** | 57 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Lube Oil Range Organics | **Detected** | 110 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***93*** | ***50-150*** | | | | |
| **Client ID:** | **TP-C-2** | | | | | |
| Laboratory ID: | 06-324-03 | | | | | |
| Gasoline Range Organics | **ND** | 23 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Diesel Range Organics | **ND** | 56 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Lube Oil Range Organics | **ND** | 110 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***98*** | ***50-150*** | | | | |
| **Client ID:** | **TP-D-1.5** | | | | | |
| Laboratory ID: | 06-324-04 | | | | | |
| Gasoline Range Organics | **Detected** | 23 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Diesel Range Organics | **ND** | 59 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Lube Oil Range Organics | **Detected** | 120 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***95*** | ***50-150*** | | | | |
| **Client ID:** | **TP-E-2** | | | | | |
| Laboratory ID: | 06-324-05 | | | | | |
| Gasoline Range Organics | **Detected** | 23 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Diesel Range Organics | **Detected** | 57 | NWTPH-HCID | 7-1-19 | 7-1-19 | N |
| Lube Oil | **Detected** | 110 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***94*** | ***50-150*** | | | | |



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Laboratory Reference: 1906-324
Project: 16-06310-011

**HYDROCARBON IDENTIFICATION**
**NWTPH-HCID**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-F-2.5** | | | | | |
| Laboratory ID: | 06-324-06 | | | | | |
| Gasoline Range Organics | **Detected** | 23 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Diesel Range Organics | **Detected** | 58 | NWTPH-HCID | 7-1-19 | 7-1-19 | N |
| Lube Oil | **Detected** | 120 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***104*** | ***50-150*** | | | | |
| **Client ID:** | **TP-K-1** | | | | | |
| Laboratory ID: | 06-324-07 | | | | | |
| Gasoline Range Organics | **ND** | 22 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Diesel Range Organics | **ND** | 56 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Lube Oil | **Detected** | 110 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***92*** | ***50-150*** | | | | |
| **Client ID:** | **Ditch-1-0** | | | | | |
| Laboratory ID: | 06-324-08 | | | | | |
| Gasoline Range Organics | **ND** | 21 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Diesel Range Organics | **ND** | 52 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Lube Oil Range Organics | **ND** | 100 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***88*** | ***50-150*** | | | | |
| **Client ID:** | **Ditch-2-0** | | | | | |
| Laboratory ID: | 06-324-09 | | | | | |
| Gasoline Range Organics | **Detected** | 22 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Diesel Range Organics | **ND** | 54 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Lube Oil Range Organics | **Detected** | 110 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***94*** | ***50-150*** | | | | |



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Project: 16-06310-011

**HYDROCARBON IDENTIFICATION**
**NWTPH-HCID**
**QUALITY CONTROL**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0701S1 | | | | | |
| Gasoline Range Organics | **ND** | 20 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Diesel Range Organics | **ND** | 50 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| Lube Oil Range Organics | **ND** | 100 | NWTPH-HCID | 7-1-19 | 7-1-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***93*** | ***50-150*** | | | | |



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**GASOLINE RANGE ORGANICS**
**NWTPH-Gx**

Matrix: Soil
Units: mg/kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-3-0** | | | | | |
| Laboratory ID: | 06-324-10 | | | | | |
| Gasoline | **ND** | 6.4 | NWTPH-Gx | 7-2-19 | 7-3-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***91*** | ***58-129*** | | | | |
| **Client ID:** | **Ditch-4-0** | | | | | |
| Laboratory ID: | 06-324-11 | | | | | |
| Gasoline | **ND** | 6.4 | NWTPH-Gx | 7-2-19 | 7-3-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***94*** | ***58-129*** | | | | |



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Project: 16-06310-011

**GASOLINE RANGE ORGANICS**
**NWTPH-Gx**
**QUALITY CONTROL**

Matrix: Soil
Units: mg/kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0702S3 | | | | | |
| Gasoline | **ND** | 5.0 | NWTPH-Gx | 7-2-19 | 7-2-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***86*** | ***58-129*** | | | | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | | |
| Laboratory ID: | 06-309-01 | | | | | | | | | | |
| | ORIG | DUP | | | | | | | | | |
| Gasoline | **ND** | **ND** | NA | NA | | NA | | NA | NA | 30 | |
| ***Surrogate:*** | | | | | | | | | | | |
| ***Fluorobenzene*** | | | | | | ***104*** | ***99*** | ***58-129*** | | | |



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**GASOLINE RANGE ORGANICS**
**NWTPH-Gx**

Matrix: Soil
Units: mg/kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-D-1.5** | | | | | |
| Laboratory ID: | 06-324-04 | | | | | |
| Gasoline | **ND** | 5.9 | NWTPH-Gx | 7-9-19 | 7-9-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***91*** | ***58-129*** | | | | |
| **Client ID:** | **TP-E-2** | | | | | |
| Laboratory ID: | 06-324-05 | | | | | |
| Gasoline | **ND** | 5.9 | NWTPH-Gx | 7-9-19 | 7-9-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***94*** | ***58-129*** | | | | |
| **Client ID:** | **TP-F-2.5** | | | | | |
| Laboratory ID: | 06-324-06 | | | | | |
| Gasoline | **ND** | 5.4 | NWTPH-Gx | 7-9-19 | 7-9-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***93*** | ***58-129*** | | | | |
| **Client ID:** | **Ditch-2-0** | | | | | |
| Laboratory ID: | 06-324-09 | | | | | |
| Gasoline | **ND** | 5.2 | NWTPH-Gx | 7-9-19 | 7-9-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***90*** | ***58-129*** | | | | |



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Project: 16-06310-011

**GASOLINE RANGE ORGANICS**
**NWTPH-Gx**
**QUALITY CONTROL**

Matrix: Soil
Units: mg/kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0709S1 | | | | | |
| Gasoline | **ND** | 5.0 | NWTPH-Gx | 7-9-19 | 7-9-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***88*** | ***58-129*** | | | | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | | |
| Laboratory ID: | 06-324-04 | | | | | | | | | | |
| | ORIG | DUP | | | | | | | | | |
| Gasoline | **ND** | **ND** | NA | NA | | NA | | NA | NA | 30 | |
| ***Surrogate:*** | | | | | | | | | | | |
| ***Fluorobenzene*** | | | | | | ***91*** | ***90*** | ***58-129*** | | | |



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**DIESEL AND HEAVY OIL RANGE ORGANICS**
**NWTPH-Dx**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-3-0** | | | | | |
| Laboratory ID: | 06-324-10 | | | | | |
| Diesel Range Organics | **ND** | 29 | NWTPH-Dx | 7-1-19 | 7-2-19 | X1 |
| Lube Oil Range Organics | **81** | 57 | NWTPH-Dx | 7-1-19 | 7-2-19 | X1 |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***84*** | ***50-150*** | | | | |
| | | | | | | |
| **Client ID:** | **Ditch-4-0** | | | | | |
| Laboratory ID: | 06-324-11 | | | | | |
| Diesel Range Organics | **ND** | 28 | NWTPH-Dx | 7-1-19 | 7-2-19 | X1 |
| Lube Oil Range Organics | **170** | 57 | NWTPH-Dx | 7-1-19 | 7-2-19 | X1 |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***97*** | ***50-150*** | | | | |



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**DIESEL AND HEAVY OIL RANGE ORGANICS**
**NWTPH-Dx**
**QUALITY CONTROL**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0701S2 | | | | | |
| Diesel Range Organics | **ND** | 25 | NWTPH-Dx | 7-1-19 | 7-2-19 | X1 |
| Lube Oil Range Organics | **ND** | 50 | NWTPH-Dx | 7-1-19 | 7-2-19 | X1 |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***107*** | ***50-150*** | | | | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | |
| Laboratory ID: | 06-324-11 | | | | | | | | | |
| | ORIG | DUP | | | | | | | | |
| Diesel Range | **ND** | **ND** | NA | NA | | NA | NA | NA | NA | X1 |
| Lube Oil Range Organics | **145** | **145** | NA | NA | | NA | NA | 0 | NA | X1 |
| ***Surrogate:*** | | | | | | | | | | |
| ***o-Terphenyl*** | | | | | | ***97*** ***102*** | ***50-150*** | | | |



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Project: 16-06310-011

**DIESEL AND HEAVY OIL RANGE ORGANICS**
**NWTPH-Dx**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-A-3** | | | | | |
| Laboratory ID: | 06-324-01 | | | | | |
| Diesel Range Organics | **ND** | 28 | NWTPH-Dx | 7-10-19 | 7-12-19 | |
| Lube Oil Range Organics | **250** | 57 | NWTPH-Dx | 7-10-19 | 7-12-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***82*** | ***50-150*** | | | | |
| **Client ID:** | **TP-B-4** | | | | | |
| Laboratory ID: | 06-324-02 | | | | | |
| Diesel Range Organics | **ND** | 29 | NWTPH-Dx | 7-10-19 | 7-10-19 | |
| Lube Oil Range Organics | **300** | 57 | NWTPH-Dx | 7-10-19 | 7-10-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***77*** | ***50-150*** | | | | |
| **Client ID:** | **TP-D-1.5** | | | | | |
| Laboratory ID: | 06-324-04 | | | | | |
| Diesel Range Organics | **ND** | 29 | NWTPH-Dx | 7-10-19 | 7-11-19 | |
| Lube Oil Range Organics | **300** | 59 | NWTPH-Dx | 7-10-19 | 7-11-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***80*** | ***50-150*** | | | | |
| **Client ID:** | **TP-E-2** | | | | | |
| Laboratory ID: | 06-324-05 | | | | | |
| Diesel Range Organics | **ND** | 49 | NWTPH-Dx | 7-10-19 | 7-11-19 | U1 |
| Lube Oil | **640** | 57 | NWTPH-Dx | 7-10-19 | 7-11-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***74*** | ***50-150*** | | | | |
| **Client ID:** | **TP-F-2.5** | | | | | |
| Laboratory ID: | 06-324-06 | | | | | |
| Diesel Range Organics | **ND** | 620 | NWTPH-Dx | 7-10-19 | 7-12-19 | U1 |
| Lube Oil | **8500** | 1200 | NWTPH-Dx | 7-10-19 | 7-12-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***---*** | ***50-150*** | | | | S |
| **Client ID:** | **TP-K-1** | | | | | |
| Laboratory ID: | 06-324-07 | | | | | |
| Diesel Range Organics | **ND** | 28 | NWTPH-Dx | 7-10-19 | 7-11-19 | |
| Lube Oil | **450** | 56 | NWTPH-Dx | 7-10-19 | 7-11-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***76*** | ***50-150*** | | | | |



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Project: 16-06310-011

**DIESEL AND HEAVY OIL RANGE ORGANICS**
**NWTPH-Dx**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-2-0** | | | | | |
| Laboratory ID: | 06-324-09 | | | | | |
| Diesel Range Organics | **ND** | 27 | NWTPH-Dx | 7-10-19 | 7-11-19 | |
| Lube Oil Range Organics | **260** | 54 | NWTPH-Dx | 7-10-19 | 7-11-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***70*** | ***50-150*** | | | | |



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**DIESEL AND HEAVY OIL RANGE ORGANICS**
**NWTPH-Dx**
**QUALITY CONTROL**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0710S2 | | | | | |
| Diesel Range Organics | **ND** | 25 | NWTPH-Dx | 7-10-19 | 7-10-19 | |
| Lube Oil Range Organics | **ND** | 50 | NWTPH-Dx | 7-10-19 | 7-10-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***84*** | ***50-150*** | | | | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | | |
| Laboratory ID: | 06-324-01 | | | | | | | | | | |
| | ORIG | DUP | | | | | | | | | |
| Diesel Range | **ND** | **ND** | NA | NA | | NA | | NA | NA | NA | |
| Lube Oil Range Organics | **217** | **174** | NA | NA | | NA | | NA | 22 | NA | |
| ***Surrogate:*** | | | | | | | | | | | |
| ***o-Terphenyl*** | | | | | | ***82*** | ***77*** | ***50-150*** | | | |



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**VOLATILE ORGANICS EPA 8260C**

Matrix: Soil
Units: mg/kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-D-1.5** | | | | | |
| Laboratory ID: | 06-324-04 | | | | | |
| tert-Butyl Alcohol (TBA) | ND | 0.026 | EPA 8260C | 7-7-19 | 7-7-19 | |
| tert-Butyl Ethyl Ether (ETBE) | ND | 0.0053 | EPA 8260C | 7-7-19 | 7-7-19 | |
| tert-Amyl Methyl Ether (TAME) | ND | 0.0053 | EPA 8260C | 7-7-19 | 7-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***114*** | ***76-131*** | | | | |
| ***Toluene-d8*** | ***98*** | ***78-128*** | | | | |
| ***4-Bromofluorobenzene*** | ***80*** | ***71-130*** | | | | |



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Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**

Matrix: Soil
Units: mg/kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-E-2** | | | | | |
| Laboratory ID: | 06-324-05 | | | | | |
| tert-Butyl Alcohol (TBA) | ND | 0.024 | EPA 8260C | 7-7-19 | 7-7-19 | |
| tert-Butyl Ethyl Ether (ETBE) | ND | 0.0048 | EPA 8260C | 7-7-19 | 7-7-19 | |
| tert-Amyl Methyl Ether (TAME) | ND | 0.0048 | EPA 8260C | 7-7-19 | 7-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***116*** | ***76-131*** | | | | |
| ***Toluene-d8*** | ***96*** | ***78-128*** | | | | |
| ***4-Bromofluorobenzene*** | ***78*** | ***71-130*** | | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**

Matrix: Soil
Units: mg/kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-F-2.5** | | | | | |
| Laboratory ID: | 06-324-06 | | | | | |
| tert-Butyl Alcohol (TBA) | ND | 0.026 | EPA 8260C | 7-7-19 | 7-7-19 | |
| tert-Butyl Ethyl Ether (ETBE) | ND | 0.0053 | EPA 8260C | 7-7-19 | 7-7-19 | |
| tert-Amyl Methyl Ether (TAME) | ND | 0.0053 | EPA 8260C | 7-7-19 | 7-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***123*** | ***76-131*** | | | | |
| ***Toluene-d8*** | ***89*** | ***78-128*** | | | | |
| ***4-Bromofluorobenzene*** | ***76*** | ***71-130*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**

Matrix: Soil
Units: mg/kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-2-0** | | | | | |
| Laboratory ID: | 06-324-09 | | | | | |
| tert-Butyl Alcohol (TBA) | ND | 0.025 | EPA 8260C | 7-7-19 | 7-7-19 | |
| tert-Butyl Ethyl Ether (ETBE) | ND | 0.0051 | EPA 8260C | 7-7-19 | 7-7-19 | |
| tert-Amyl Methyl Ether (TAME) | ND | 0.0051 | EPA 8260C | 7-7-19 | 7-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***115*** | ***76-131*** | | | | |
| ***Toluene-d8*** | ***96*** | ***78-128*** | | | | |
| ***4-Bromofluorobenzene*** | ***75*** | ***71-130*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**

Matrix: Soil
Units: mg/kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-3-0** | | | | | |
| Laboratory ID: | 06-324-10 | | | | | |
| tert-Butyl Alcohol (TBA) | ND | 0.031 | EPA 8260C | 7-7-19 | 7-7-19 | |
| tert-Butyl Ethyl Ether (ETBE) | ND | 0.0061 | EPA 8260C | 7-7-19 | 7-7-19 | |
| tert-Amyl Methyl Ether (TAME) | ND | 0.0061 | EPA 8260C | 7-7-19 | 7-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***111*** | ***76-131*** | | | | |
| ***Toluene-d8*** | ***104*** | ***78-128*** | | | | |
| ***4-Bromofluorobenzene*** | ***78*** | ***71-130*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**

Matrix: Soil
Units: mg/kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-4-0** | | | | | |
| Laboratory ID: | 06-324-11 | | | | | |
| tert-Butyl Alcohol (TBA) | ND | 0.029 | EPA 8260C | 7-7-19 | 7-7-19 | |
| tert-Butyl Ethyl Ether (ETBE) | ND | 0.0058 | EPA 8260C | 7-7-19 | 7-7-19 | |
| tert-Amyl Methyl Ether (TAME) | ND | 0.0058 | EPA 8260C | 7-7-19 | 7-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***114*** | ***76-131*** | | | | |
| ***Toluene-d8*** | ***100*** | ***78-128*** | | | | |
| ***4-Bromofluorobenzene*** | ***79*** | ***71-130*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**
**METHOD BLANK QUALITY CONTROL**

Matrix: Soil
Units: mg/kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| Laboratory ID: | MB0707S1 | | | | | |
| tert-Butyl Alcohol (TBA) | ND | 0.025 | EPA 8260C | 7-7-19 | 7-7-19 | |
| tert-Butyl Ethyl Ether (ETBE) | ND | 0.0050 | EPA 8260C | 7-7-19 | 7-7-19 | |
| tert-Amyl Methyl Ether (TAME) | ND | 0.0050 | EPA 8260C | 7-7-19 | 7-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***109*** | ***76-131*** | | | | |
| ***Toluene-d8*** | ***102*** | ***78-128*** | | | | |
| ***4-Bromofluorobenzene*** | ***91*** | ***71-130*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**
**SB/SBD QUALITY CONTROL**

Matrix: Soil
Units: mg/kg

| Analyte | Result | | Spike Level | | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **SPIKE BLANKS** | | | | | | | | | | |
| Laboratory ID: | SB0707S1 | | | | | | | | | |
| | SB | SBD | SB | SBD | SB | SBD | | | | |
| 1,1-Dichloroethene | **0.0419** | **0.0447** | 0.0500 | 0.0500 | 84 | 89 | 57-133 | 6 | 18 | |
| Benzene | **0.0405** | **0.0451** | 0.0500 | 0.0500 | 81 | 90 | 71-129 | 11 | 16 | |
| Trichloroethene | **0.0448** | **0.0490** | 0.0500 | 0.0500 | 90 | 98 | 71-122 | 9 | 16 | |
| Toluene | **0.0403** | **0.0458** | 0.0500 | 0.0500 | 81 | 92 | 74-125 | 13 | 15 | |
| Chlorobenzene | **0.0449** | **0.0497** | 0.0500 | 0.0500 | 90 | 99 | 72-120 | 10 | 14 | |
| ***Surrogate:*** | | | | | | | | | | |
| ***Dibromofluoromethane*** | | | | | ***91*** | ***94*** | ***76-131*** | | | |
| ***Toluene-d8*** | | | | | ***90*** | ***91*** | ***78-128*** | | | |
| ***4-Bromofluorobenzene*** | | | | | ***89*** | ***91*** | ***71-130*** | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
Page 1 of 2

Matrix: Soil
Units: mg/kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-D-1.5** | | | | | |
| Laboratory ID: | 06-324-04 | | | | | |
| Dichlorodifluoromethane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloromethane | ND | 0.0049 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Vinyl Chloride | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromomethane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloroethane | ND | 0.0049 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Trichlorofluoromethane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloroethene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Iodomethane | ND | 0.0049 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Methylene Chloride | ND | 0.0049 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (trans) 1,2-Dichloroethene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Methyl t-Butyl Ether | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloroethane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 2,2-Dichloropropane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (cis) 1,2-Dichloroethene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromochloromethane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloroform | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1,1-Trichloroethane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Carbon Tetrachloride | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloropropene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Benzene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dichloroethane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Trichloroethene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dichloropropane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Dibromomethane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromodichloromethane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 2-Chloroethyl Vinyl Ether | ND | 0.0095 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (cis) 1,3-Dichloropropene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Toluene | ND | 0.0049 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (trans) 1,3-Dichloropropene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |



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Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
Page 2 of 2

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-D-1.5** | | | | | |
| Laboratory ID: | 06-324-04 | | | | | |
| 1,1,2-Trichloroethane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Tetrachloroethene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,3-Dichloropropane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Dibromochloromethane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dibromoethane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chlorobenzene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Ethylbenzene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| m,p-Xylene | ND | 0.0020 | EPA 8260C | 7-7-19 | 7-7-19 | |
| o-Xylene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromoform | ND | 0.0049 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromobenzene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2,3-Trichloropropane | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 2-Chlorotoluene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 4-Chlorotoluene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,3-Dichlorobenzene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,4-Dichlorobenzene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dichlorobenzene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dibromo-3-chloropropane | ND | 0.0049 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2,4-Trichlorobenzene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Hexachlorobutadiene | ND | 0.0049 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2,3-Trichlorobenzene | ND | 0.00099 | EPA 8260C | 7-7-19 | 7-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***99*** | ***76-131*** | | | | |
| ***Toluene-d8*** | ***90*** | ***78-128*** | | | | |
| ***4-Bromofluorobenzene*** | ***79*** | ***71-130*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
Page 1 of 2

Matrix: Soil
Units: mg/kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-E-2** | | | | | |
| Laboratory ID: | 06-324-05 | | | | | |
| Dichlorodifluoromethane | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloromethane | ND | 0.0048 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Vinyl Chloride | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromomethane | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloroethane | ND | 0.0048 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Trichlorofluoromethane | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloroethene | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Iodomethane | ND | 0.0048 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Methylene Chloride | ND | 0.0048 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (trans) 1,2-Dichloroethene | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Methyl t-Butyl Ether | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloroethane | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 2,2-Dichloropropane | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (cis) 1,2-Dichloroethene | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromochloromethane | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloroform | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1,1-Trichloroethane | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Carbon Tetrachloride | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloropropene | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Benzene | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dichloroethane | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Trichloroethene | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dichloropropane | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Dibromomethane | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromodichloromethane | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 2-Chloroethyl Vinyl Ether | ND | 0.0092 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (cis) 1,3-Dichloropropene | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Toluene | ND | 0.0048 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (trans) 1,3-Dichloropropene | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |



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Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
Page 2 of 2

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-E-2** | | | | | |
| Laboratory ID: | 06-324-05 | | | | | |
| 1,1,2-Trichloroethane | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Tetrachloroethene | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,3-Dichloropropane | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Dibromochloromethane | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dibromoethane | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chlorobenzene | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Ethylbenzene | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| m,p-Xylene | ND | 0.0019 | EPA 8260C | 7-7-19 | 7-7-19 | |
| o-Xylene | ND | 0.00096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromoform | ND | 0.0048 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromobenzene | ND | 0.081 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.075 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2,3-Trichloropropane | ND | 0.075 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 2-Chlorotoluene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 4-Chlorotoluene | ND | 0.075 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,3-Dichlorobenzene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,4-Dichlorobenzene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2-Dichlorobenzene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2-Dibromo-3-chloropropane | ND | 0.29 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2,4-Trichlorobenzene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Hexachlorobutadiene | ND | 0.29 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2,3-Trichlorobenzene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***101*** | ***76-131*** | | | | |
| ***Toluene-d8*** | ***89*** | ***78-128*** | | | | |
| ***4-Bromofluorobenzene*** | ***77*** | ***71-130*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
Page 1 of 2

Matrix: Soil
Units: mg/kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-F-2.5** | | | | | |
| Laboratory ID: | 06-324-06 | | | | | |
| Dichlorodifluoromethane | ND | 0.0017 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Chloromethane | ND | 0.0069 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Vinyl Chloride | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Bromomethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Chloroethane | ND | 0.0050 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Trichlorofluoromethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,1-Dichloroethene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Iodomethane | ND | 0.0050 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Methylene Chloride | ND | 0.0050 | EPA 8260C | 7-9-19 | 7-9-19 | |
| (trans) 1,2-Dichloroethene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Methyl t-Butyl Ether | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,1-Dichloroethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 2,2-Dichloropropane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| (cis) 1,2-Dichloroethene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Bromochloromethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Chloroform | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,1,1-Trichloroethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Carbon Tetrachloride | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,1-Dichloropropene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Benzene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2-Dichloroethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Trichloroethene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2-Dichloropropane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Dibromomethane | ND | 0.0014 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Bromodichloromethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 2-Chloroethyl Vinyl Ether | ND | 0.0050 | EPA 8260C | 7-9-19 | 7-9-19 | |
| (cis) 1,3-Dichloropropene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Toluene | ND | 0.0050 | EPA 8260C | 7-9-19 | 7-9-19 | |
| (trans) 1,3-Dichloropropene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |



This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
Page 2 of 2

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-F-2.5** | | | | | |
| Laboratory ID: | 06-324-06 | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Tetrachloroethene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,3-Dichloropropane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Dibromochloromethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2-Dibromoethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Chlorobenzene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Ethylbenzene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| m,p-Xylene | ND | 0.0020 | EPA 8260C | 7-9-19 | 7-9-19 | |
| o-Xylene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Bromoform | ND | 0.0050 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Bromobenzene | ND | 0.082 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.076 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2,3-Trichloropropane | ND | 0.076 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 2-Chlorotoluene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 4-Chlorotoluene | ND | 0.076 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,3-Dichlorobenzene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,4-Dichlorobenzene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2-Dichlorobenzene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2-Dibromo-3-chloropropane | ND | 0.29 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2,4-Trichlorobenzene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Hexachlorobutadiene | ND | 0.29 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2,3-Trichlorobenzene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***89*** | ***76-131*** | | | | |
| ***Toluene-d8*** | ***80*** | ***78-128*** | | | | |
| ***4-Bromofluorobenzene*** | ***76*** | ***71-130*** | | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
Page 1 of 2

Matrix: Soil
Units: mg/kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-2-0** | | | | | |
| Laboratory ID: | 06-324-09 | | | | | |
| Dichlorodifluoromethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloromethane | ND | 0.0051 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Vinyl Chloride | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromomethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloroethane | ND | 0.0051 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Trichlorofluoromethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloroethene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Iodomethane | ND | 0.0051 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Methylene Chloride | ND | 0.0051 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (trans) 1,2-Dichloroethene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Methyl t-Butyl Ether | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloroethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 2,2-Dichloropropane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (cis) 1,2-Dichloroethene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromochloromethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloroform | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1,1-Trichloroethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Carbon Tetrachloride | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloropropene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Benzene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dichloroethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Trichloroethene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dichloropropane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Dibromomethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromodichloromethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 2-Chloroethyl Vinyl Ether | ND | 0.0098 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (cis) 1,3-Dichloropropene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Toluene | ND | 0.0051 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (trans) 1,3-Dichloropropene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
Page 2 of 2

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-2-0** | | | | | |
| Laboratory ID: | 06-324-09 | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Tetrachloroethene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,3-Dichloropropane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Dibromochloromethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dibromoethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chlorobenzene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Ethylbenzene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| m,p-Xylene | ND | 0.0020 | EPA 8260C | 7-7-19 | 7-7-19 | |
| o-Xylene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromoform | ND | 0.0051 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromobenzene | ND | 0.062 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.057 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2,3-Trichloropropane | ND | 0.057 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 2-Chlorotoluene | ND | 0.044 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 4-Chlorotoluene | ND | 0.057 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,3-Dichlorobenzene | ND | 0.044 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,4-Dichlorobenzene | ND | 0.044 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2-Dichlorobenzene | ND | 0.044 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2-Dibromo-3-chloropropane | ND | 0.22 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2,4-Trichlorobenzene | ND | 0.044 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Hexachlorobutadiene | ND | 0.22 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2,3-Trichlorobenzene | ND | 0.044 | EPA 8260C | 7-9-19 | 7-9-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***100*** | ***76-131*** | | | | |
| ***Toluene-d8*** | ***89*** | ***78-128*** | | | | |
| ***4-Bromofluorobenzene*** | ***74*** | ***71-130*** | | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
Page 1 of 2

Matrix: Soil
Units: mg/kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-3-0** | | | | | |
| Laboratory ID: | 06-324-10 | | | | | |
| Dichlorodifluoromethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloromethane | ND | 0.0061 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Vinyl Chloride | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromomethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloroethane | ND | 0.0061 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Trichlorofluoromethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloroethene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Iodomethane | ND | 0.0061 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Methylene Chloride | ND | 0.0061 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (trans) 1,2-Dichloroethene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Methyl t-Butyl Ether | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloroethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 2,2-Dichloropropane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (cis) 1,2-Dichloroethene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromochloromethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloroform | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1,1-Trichloroethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Carbon Tetrachloride | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloropropene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Benzene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dichloroethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Trichloroethene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dichloropropane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Dibromomethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromodichloromethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 2-Chloroethyl Vinyl Ether | ND | 0.012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (cis) 1,3-Dichloropropene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Toluene | ND | 0.0061 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (trans) 1,3-Dichloropropene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
Page 2 of 2

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-3-0** | | | | | |
| Laboratory ID: | 06-324-10 | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Tetrachloroethene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,3-Dichloropropane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Dibromochloromethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dibromoethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chlorobenzene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Ethylbenzene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| m,p-Xylene | ND | 0.0025 | EPA 8260C | 7-7-19 | 7-7-19 | |
| o-Xylene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromoform | ND | 0.0061 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromobenzene | ND | 0.081 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.076 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2,3-Trichloropropane | ND | 0.076 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 2-Chlorotoluene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 4-Chlorotoluene | ND | 0.076 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,3-Dichlorobenzene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,4-Dichlorobenzene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2-Dichlorobenzene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2-Dibromo-3-chloropropane | ND | 0.29 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2,4-Trichlorobenzene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Hexachlorobutadiene | ND | 0.29 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2,3-Trichlorobenzene | ND | 0.058 | EPA 8260C | 7-9-19 | 7-9-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***96*** | ***76-131*** | | | | |
| ***Toluene-d8*** | ***96*** | ***78-128*** | | | | |
| ***4-Bromofluorobenzene*** | ***76*** | ***71-130*** | | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
Page 1 of 2

Matrix: Soil
Units: mg/kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-4-0** | | | | | |
| Laboratory ID: | 06-324-11 | | | | | |
| Dichlorodifluoromethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloromethane | ND | 0.0058 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Vinyl Chloride | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromomethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloroethane | ND | 0.0058 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Trichlorofluoromethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloroethene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Iodomethane | ND | 0.0058 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Methylene Chloride | 0.0073 | 0.0058 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (trans) 1,2-Dichloroethene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Methyl t-Butyl Ether | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloroethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 2,2-Dichloropropane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (cis) 1,2-Dichloroethene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromochloromethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloroform | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1,1-Trichloroethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Carbon Tetrachloride | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloropropene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Benzene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dichloroethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Trichloroethene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dichloropropane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Dibromomethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromodichloromethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 2-Chloroethyl Vinyl Ether | ND | 0.011 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (cis) 1,3-Dichloropropene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Toluene | ND | 0.0058 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (trans) 1,3-Dichloropropene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
Page 2 of 2

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-4-0** | | | | | |
| Laboratory ID: | 06-324-11 | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Tetrachloroethene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,3-Dichloropropane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Dibromochloromethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dibromoethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chlorobenzene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Ethylbenzene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| m,p-Xylene | ND | 0.0023 | EPA 8260C | 7-7-19 | 7-7-19 | |
| o-Xylene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromoform | ND | 0.0058 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromobenzene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2,3-Trichloropropane | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 2-Chlorotoluene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 4-Chlorotoluene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,3-Dichlorobenzene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,4-Dichlorobenzene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dichlorobenzene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dibromo-3-chloropropane | ND | 0.0058 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2,4-Trichlorobenzene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Hexachlorobutadiene | ND | 0.0058 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2,3-Trichlorobenzene | ND | 0.0012 | EPA 8260C | 7-7-19 | 7-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***99*** | ***76-131*** | | | | |
| ***Toluene-d8*** | ***93*** | ***78-128*** | | | | |
| ***4-Bromofluorobenzene*** | ***78*** | ***71-130*** | | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
**METHOD BLANK QUALITY CONTROL**
Page 1 of 2

Matrix: Soil
Units: mg/kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| Laboratory ID: | MB0707S1 | | | | | |
| Dichlorodifluoromethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloromethane | ND | 0.0050 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Vinyl Chloride | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromomethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloroethane | ND | 0.0050 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Trichlorofluoromethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloroethene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Iodomethane | ND | 0.0050 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Methylene Chloride | ND | 0.0050 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (trans) 1,2-Dichloroethene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Methyl t-Butyl Ether | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloroethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 2,2-Dichloropropane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (cis) 1,2-Dichloroethene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromochloromethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chloroform | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1,1-Trichloroethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Carbon Tetrachloride | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1-Dichloropropene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Benzene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dichloroethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Trichloroethene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dichloropropane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Dibromomethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromodichloromethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 2-Chloroethyl Vinyl Ether | ND | 0.0096 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (cis) 1,3-Dichloropropene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Toluene | ND | 0.0050 | EPA 8260C | 7-7-19 | 7-7-19 | |
| (trans) 1,3-Dichloropropene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
**METHOD BLANK QUALITY CONTROL**
Page 2 of 2

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| Laboratory ID: | MB0707S1 | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Tetrachloroethene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,3-Dichloropropane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Dibromochloromethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dibromoethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Chlorobenzene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Ethylbenzene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| m,p-Xylene | ND | 0.0020 | EPA 8260C | 7-7-19 | 7-7-19 | |
| o-Xylene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromoform | ND | 0.0050 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Bromobenzene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2,3-Trichloropropane | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 2-Chlorotoluene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 4-Chlorotoluene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,3-Dichlorobenzene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,4-Dichlorobenzene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dichlorobenzene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2-Dibromo-3-chloropropane | ND | 0.0050 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2,4-Trichlorobenzene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| Hexachlorobutadiene | ND | 0.0050 | EPA 8260C | 7-7-19 | 7-7-19 | |
| 1,2,3-Trichlorobenzene | ND | 0.0010 | EPA 8260C | 7-7-19 | 7-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***95*** | ***76-131*** | | | | |
| ***Toluene-d8*** | ***95*** | ***78-128*** | | | | |
| ***4-Bromofluorobenzene*** | ***90*** | ***71-130*** | | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
**METHOD BLANK QUALITY CONTROL**
Page 1 of 2

Matrix: Soil
Units: mg/kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| Laboratory ID: | MB0709S2 | | | | | |
| Dichlorodifluoromethane | ND | 0.0017 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Chloromethane | ND | 0.0069 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Vinyl Chloride | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Bromomethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Chloroethane | ND | 0.0050 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Trichlorofluoromethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,1-Dichloroethene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Iodomethane | ND | 0.0050 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Methylene Chloride | ND | 0.0050 | EPA 8260C | 7-9-19 | 7-9-19 | |
| (trans) 1,2-Dichloroethene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Methyl t-Butyl Ether | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,1-Dichloroethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 2,2-Dichloropropane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| (cis) 1,2-Dichloroethene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Bromochloromethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Chloroform | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,1,1-Trichloroethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Carbon Tetrachloride | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,1-Dichloropropene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Benzene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2-Dichloroethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Trichloroethene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2-Dichloropropane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Dibromomethane | ND | 0.0014 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Bromodichloromethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 2-Chloroethyl Vinyl Ether | ND | 0.0050 | EPA 8260C | 7-9-19 | 7-9-19 | |
| (cis) 1,3-Dichloropropene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Toluene | ND | 0.0050 | EPA 8260C | 7-9-19 | 7-9-19 | |
| (trans) 1,3-Dichloropropene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
**METHOD BLANK QUALITY CONTROL**
Page 2 of 2

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| Laboratory ID: | MB0709S2 | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Tetrachloroethene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,3-Dichloropropane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Dibromochloromethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2-Dibromoethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Chlorobenzene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Ethylbenzene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| m,p-Xylene | ND | 0.0020 | EPA 8260C | 7-9-19 | 7-9-19 | |
| o-Xylene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Bromoform | ND | 0.0050 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Bromobenzene | ND | 0.0014 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0013 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2,3-Trichloropropane | ND | 0.0013 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 2-Chlorotoluene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 4-Chlorotoluene | ND | 0.0013 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,3-Dichlorobenzene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,4-Dichlorobenzene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2-Dichlorobenzene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2-Dibromo-3-chloropropane | ND | 0.0050 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2,4-Trichlorobenzene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| Hexachlorobutadiene | ND | 0.0050 | EPA 8260C | 7-9-19 | 7-9-19 | |
| 1,2,3-Trichlorobenzene | ND | 0.0010 | EPA 8260C | 7-9-19 | 7-9-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***93*** | ***76-131*** | | | | |
| ***Toluene-d8*** | ***94*** | ***78-128*** | | | | |
| ***4-Bromofluorobenzene*** | ***108*** | ***71-130*** | | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**VOLATILES EPA 8260C**
**SB/SBD QUALITY CONTROL**

Matrix: Soil
Units: mg/kg

| Analyte | Result | | Spike Level | | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **SPIKE BLANKS** | | | | | | | | | | |
| Laboratory ID: | SB0707S1 | | | | | | | | | |
| | SB | SBD | SB | SBD | SB | SBD | | | | |
| 1,1-Dichloroethene | **0.0419** | **0.0447** | 0.0500 | 0.0500 | 84 | 89 | 57-133 | 6 | 18 | |
| Benzene | **0.0405** | **0.0451** | 0.0500 | 0.0500 | 81 | 90 | 71-129 | 11 | 16 | |
| Trichloroethene | **0.0448** | **0.0490** | 0.0500 | 0.0500 | 90 | 98 | 71-122 | 9 | 16 | |
| Toluene | **0.0403** | **0.0458** | 0.0500 | 0.0500 | 81 | 92 | 74-125 | 13 | 15 | |
| Chlorobenzene | **0.0449** | **0.0497** | 0.0500 | 0.0500 | 90 | 99 | 72-120 | 10 | 14 | |
| ***Surrogate:*** | | | | | | | | | | |
| ***Dibromofluoromethane*** | | | | | ***91*** | ***94*** | ***76-131*** | | | |
| ***Toluene-d8*** | | | | | ***90*** | ***91*** | ***78-128*** | | | |
| ***4-Bromofluorobenzene*** | | | | | ***89*** | ***91*** | ***71-130*** | | | |
| Laboratory ID: | SB0709S2 | | | | | | | | | |
| | SB | SBD | SB | SBD | SB | SBD | | | | |
| 1,1-Dichloroethene | **0.0361** | **0.0396** | 0.0500 | 0.0500 | 72 | 79 | 57-133 | 9 | 18 | |
| Benzene | **0.0372** | **0.0405** | 0.0500 | 0.0500 | 74 | 81 | 71-129 | 8 | 16 | |
| Trichloroethene | **0.0436** | **0.0458** | 0.0500 | 0.0500 | 87 | 92 | 71-122 | 5 | 16 | |
| Toluene | **0.0392** | **0.0425** | 0.0500 | 0.0500 | 78 | 85 | 74-125 | 8 | 15 | |
| Chlorobenzene | **0.0437** | **0.0453** | 0.0500 | 0.0500 | 87 | 91 | 72-120 | 4 | 14 | |
| ***Surrogate:*** | | | | | | | | | | |
| ***Dibromofluoromethane*** | | | | | ***92*** | ***94*** | ***76-131*** | | | |
| ***Toluene-d8*** | | | | | ***93*** | ***92*** | ***78-128*** | | | |
| ***4-Bromofluorobenzene*** | | | | | ***107*** | ***102*** | ***71-130*** | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PAHs EPA 8270D/SIM**

Matrix: Soil
Units: mg/Kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-3-0** | | | | | |
| Laboratory ID: | 06-324-10 | | | | | |
| Naphthalene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| 2-Methylnaphthalene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| 1-Methylnaphthalene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Benzo[a]anthracene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Chrysene | **0.0080** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Benzo[b]fluoranthene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Benzo[a]pyrene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Indeno(1,2,3-c,d)pyrene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***73*** | ***40 - 111*** | | | | |
| ***Pyrene-d10*** | ***80*** | ***40 - 110*** | | | | |
| ***Terphenyl-d14*** | ***88*** | ***45 - 122*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PAHs EPA 8270D/SIM**

Matrix: Soil
Units: mg/Kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-4-0** | | | | | |
| Laboratory ID: | 06-324-11 | | | | | |
| Naphthalene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| 2-Methylnaphthalene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| 1-Methylnaphthalene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Benzo[a]anthracene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Chrysene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Benzo[b]fluoranthene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Benzo[a]pyrene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Indeno(1,2,3-c,d)pyrene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.0076 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***65*** | ***40 - 111*** | | | | |
| ***Pyrene-d10*** | ***85*** | ***40 - 110*** | | | | |
| ***Terphenyl-d14*** | ***85*** | ***45 - 122*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PAHs EPA 8270D/SIM**
**METHOD BLANK QUALITY CONTROL**

Matrix: Soil
Units: mg/Kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| Laboratory ID: | MB0701S1 | | | | | |
| Naphthalene | **ND** | 0.0067 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| 2-Methylnaphthalene | **ND** | 0.0067 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| 1-Methylnaphthalene | **ND** | 0.0067 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Benzo[a]anthracene | **ND** | 0.0067 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Chrysene | **ND** | 0.0067 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Benzo[b]fluoranthene | **ND** | 0.0067 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.0067 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Benzo[a]pyrene | **ND** | 0.0067 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Indeno(1,2,3-c,d)pyrene | **ND** | 0.0067 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.0067 | EPA 8270D/SIM | 7-1-19 | 7-1-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***87*** | ***40 - 111*** | | | | |
| ***Pyrene-d10*** | ***84*** | ***40 - 110*** | | | | |
| ***Terphenyl-d14*** | ***95*** | ***45 - 122*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PAHs EPA 8270D/SIM**
**MS/MSD QUALITY CONTROL**

Matrix: Soil
Units: mg/Kg

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MATRIX SPIKES** | | | | | | | | | | | |
| Laboratory ID: | 06-324-11 | | | | | | | | | | |
| | MS | MSD | MS | MSD | | MS | MSD | | | | |
| Naphthalene | **0.0489** | **0.0560** | 0.0833 | 0.0833 | ND | 59 | 67 | 44 - 111 | 14 | 21 | |
| Benzo[a]anthracene | **0.0827** | **0.0840** | 0.0833 | 0.0833 | ND | 99 | 101 | 53 - 131 | 2 | 23 | |
| Chrysene | **0.0781** | **0.0785** | 0.0833 | 0.0833 | ND | 94 | 94 | 46 - 126 | 1 | 24 | |
| Benzo[b]fluoranthene | **0.0791** | **0.0815** | 0.0833 | 0.0833 | ND | 95 | 98 | 45 - 127 | 3 | 25 | |
| Benzo(j,k)fluoranthene | **0.0728** | **0.0739** | 0.0833 | 0.0833 | ND | 87 | 89 | 52 - 122 | 1 | 21 | |
| Benzo[a]pyrene | **0.0716** | **0.0740** | 0.0833 | 0.0833 | ND | 86 | 89 | 51 - 126 | 3 | 24 | |
| Indeno(1,2,3-c,d)pyrene | **0.0749** | **0.0793** | 0.0833 | 0.0833 | ND | 90 | 95 | 48 - 127 | 6 | 23 | |
| Dibenz[a,h]anthracene | **0.0770** | **0.0774** | 0.0833 | 0.0833 | ND | 92 | 93 | 51 - 124 | 1 | 22 | |
| ***Surrogate:*** | | | | | | | | | | | |
| ***2-Fluorobiphenyl*** | | | | | | ***61*** | ***60*** | ***40 - 111*** | | | |
| ***Pyrene-d10*** | | | | | | ***82*** | ***86*** | ***40 - 110*** | | | |
| ***Terphenyl-d14*** | | | | | | ***86*** | ***89*** | ***45 - 122*** | | | |



This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PAHs EPA 8270D/SIM**

Matrix: Soil
Units: mg/Kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-A-3** | | | | | |
| Laboratory ID: | 06-324-01 | | | | | |
| Naphthalene | **0.016** | 0.0075 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| 2-Methylnaphthalene | **ND** | 0.0075 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| 1-Methylnaphthalene | **ND** | 0.0075 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| Benzo[a]anthracene | **ND** | 0.0075 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| Chrysene | **0.013** | 0.0075 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| Benzo[b]fluoranthene | **0.011** | 0.0075 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.0075 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| Benzo[a]pyrene | **ND** | 0.0075 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| Indeno(1,2,3-c,d)pyrene | **ND** | 0.0075 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.0075 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***57*** | ***40 - 111*** | | | | |
| ***Pyrene-d10*** | ***76*** | ***40 - 110*** | | | | |
| ***Terphenyl-d14*** | ***92*** | ***45 - 122*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PAHs EPA 8270D/SIM**

Matrix: Soil
Units: mg/Kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-B-4** | | | | | |
| Laboratory ID: | 06-324-02 | | | | | |
| Naphthalene | **ND** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| 2-Methylnaphthalene | **ND** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| 1-Methylnaphthalene | **ND** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[a]anthracene | **ND** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Chrysene | **ND** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[b]fluoranthene | **ND** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[a]pyrene | **ND** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Indeno(1,2,3-c,d)pyrene | **ND** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***48*** | ***40 - 111*** | | | | |
| ***Pyrene-d10*** | ***77*** | ***40 - 110*** | | | | |
| ***Terphenyl-d14*** | ***79*** | ***45 - 122*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PAHs EPA 8270D/SIM**

Matrix: Soil
Units: mg/Kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-D-1.5** | | | | | |
| Laboratory ID: | 06-324-04 | | | | | |
| Naphthalene | **0.0083** | 0.0078 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| 2-Methylnaphthalene | **ND** | 0.0078 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| 1-Methylnaphthalene | **ND** | 0.0078 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[a]anthracene | **ND** | 0.0078 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Chrysene | **0.0092** | 0.0078 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[b]fluoranthene | **0.0098** | 0.0078 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.0078 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[a]pyrene | **ND** | 0.0078 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Indeno(1,2,3-c,d)pyrene | **ND** | 0.0078 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.0078 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***48*** | ***40 - 111*** | | | | |
| ***Pyrene-d10*** | ***65*** | ***40 - 110*** | | | | |
| ***Terphenyl-d14*** | ***67*** | ***45 - 122*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PAHs EPA 8270D/SIM**

Matrix: Soil
Units: mg/Kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-E-2** | | | | | |
| Laboratory ID: | 06-324-05 | | | | | |
| Naphthalene | **ND** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| 2-Methylnaphthalene | **0.0088** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| 1-Methylnaphthalene | **ND** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[a]anthracene | **ND** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Chrysene | **0.033** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[b]fluoranthene | **0.030** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[a]pyrene | **ND** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Indeno(1,2,3-c,d)pyrene | **0.013** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.0076 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***62*** | ***40 - 111*** | | | | |
| ***Pyrene-d10*** | ***75*** | ***40 - 110*** | | | | |
| ***Terphenyl-d14*** | ***71*** | ***45 - 122*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PAHs EPA 8270D/SIM**

Matrix: Soil
Units: mg/Kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-F-2.5** | | | | | |
| Laboratory ID: | 06-324-06 | | | | | |
| Naphthalene | **0.16** | 0.016 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| 2-Methylnaphthalene | **0.27** | 0.016 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| 1-Methylnaphthalene | **0.11** | 0.016 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| Benzo[a]anthracene | **0.067** | 0.016 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| Chrysene | **0.25** | 0.016 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| Benzo[b]fluoranthene | **0.11** | 0.016 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| Benzo(j,k)fluoranthene | **0.083** | 0.016 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| Benzo[a]pyrene | **0.29** | 0.016 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| Indeno(1,2,3-c,d)pyrene | **0.11** | 0.016 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| Dibenz[a,h]anthracene | **0.028** | 0.016 | EPA 8270D/SIM | 7-8-19 | 7-10-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***78*** | ***40 - 111*** | | | | |
| ***Pyrene-d10*** | ***81*** | ***40 - 110*** | | | | |
| ***Terphenyl-d14*** | ***68*** | ***45 - 122*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PAHs EPA 8270D/SIM**

Matrix: Soil
Units: mg/Kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-K-1** | | | | | |
| Laboratory ID: | 06-324-07 | | | | | |
| Naphthalene | **0.010** | 0.0074 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| 2-Methylnaphthalene | **0.016** | 0.0074 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| 1-Methylnaphthalene | **ND** | 0.0074 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[a]anthracene | **ND** | 0.0074 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Chrysene | **0.020** | 0.0074 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[b]fluoranthene | **0.020** | 0.0074 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.0074 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[a]pyrene | **ND** | 0.0074 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Indeno(1,2,3-c,d)pyrene | **0.012** | 0.0074 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.0074 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***71*** | ***40 - 111*** | | | | |
| ***Pyrene-d10*** | ***73*** | ***40 - 110*** | | | | |
| ***Terphenyl-d14*** | ***72*** | ***45 - 122*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PAHs EPA 8270D/SIM**

Matrix: Soil
Units: mg/Kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-2-0** | | | | | |
| Laboratory ID: | 06-324-09 | | | | | |
| Naphthalene | **ND** | 0.0072 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| 2-Methylnaphthalene | **ND** | 0.0072 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| 1-Methylnaphthalene | **ND** | 0.0072 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[a]anthracene | **ND** | 0.0072 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Chrysene | **ND** | 0.0072 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[b]fluoranthene | **ND** | 0.0072 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.0072 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[a]pyrene | **ND** | 0.0072 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Indeno(1,2,3-c,d)pyrene | **ND** | 0.0072 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.0072 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***74*** | ***40 - 111*** | | | | |
| ***Pyrene-d10*** | ***83*** | ***40 - 110*** | | | | |
| ***Terphenyl-d14*** | ***83*** | ***45 - 122*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PAHs EPA 8270D/SIM**
**METHOD BLANK QUALITY CONTROL**

Matrix: Soil
Units: mg/Kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| Laboratory ID: | MB0708S1 | | | | | |
| Naphthalene | **ND** | 0.0067 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| 2-Methylnaphthalene | **ND** | 0.0067 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| 1-Methylnaphthalene | **ND** | 0.0067 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[a]anthracene | **ND** | 0.0067 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Chrysene | **ND** | 0.0067 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[b]fluoranthene | **ND** | 0.0067 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.0067 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Benzo[a]pyrene | **ND** | 0.0067 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Indeno(1,2,3-c,d)pyrene | **ND** | 0.0067 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.0067 | EPA 8270D/SIM | 7-8-19 | 7-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***77*** | ***40 - 111*** | | | | |
| ***Pyrene-d10*** | ***80*** | ***40 - 110*** | | | | |
| ***Terphenyl-d14*** | ***82*** | ***45 - 122*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PAHs EPA 8270D/SIM**
**MS/MSD QUALITY CONTROL**

Matrix: Soil
Units: mg/Kg

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MATRIX SPIKES** | | | | | | | | | | | |
| Laboratory ID: | 06-324-09 | | | | | | | | | | |
| | MS | MSD | MS | MSD | | MS | MSD | | | | |
| Naphthalene | **0.0661** | **0.0651** | 0.0833 | 0.0833 | ND | 79 | 78 | 44 - 111 | 2 | 21 | |
| Benzo[a]anthracene | **0.0770** | **0.0759** | 0.0833 | 0.0833 | ND | 92 | 91 | 53 - 131 | 1 | 23 | |
| Chrysene | **0.0703** | **0.0708** | 0.0833 | 0.0833 | ND | 84 | 85 | 46 - 126 | 1 | 24 | |
| Benzo[b]fluoranthene | **0.0785** | **0.0735** | 0.0833 | 0.0833 | ND | 94 | 88 | 45 - 127 | 7 | 25 | |
| Benzo(j,k)fluoranthene | **0.0654** | **0.0704** | 0.0833 | 0.0833 | ND | 79 | 85 | 52 - 122 | 7 | 21 | |
| Benzo[a]pyrene | **0.0698** | **0.0732** | 0.0833 | 0.0833 | ND | 84 | 88 | 51 - 126 | 5 | 24 | |
| Indeno(1,2,3-c,d)pyrene | **0.0697** | **0.0696** | 0.0833 | 0.0833 | ND | 84 | 84 | 48 - 127 | 0 | 23 | |
| Dibenz[a,h]anthracene | **0.0709** | **0.0707** | 0.0833 | 0.0833 | ND | 85 | 85 | 51 - 124 | 0 | 22 | |
| ***Surrogate:*** | | | | | | | | | | | |
| ***2-Fluorobiphenyl*** | | | | | | ***73*** | ***73*** | ***40 - 111*** | | | |
| ***Pyrene-d10*** | | | | | | ***79*** | ***77*** | ***40 - 110*** | | | |
| ***Terphenyl-d14*** | | | | | | ***79*** | ***77*** | ***45 - 122*** | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PCBs EPA 8082A**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-3-0** | | | | | |
| Laboratory ID: | 06-324-10 | | | | | |
| Aroclor 1016 | **ND** | 0.057 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1221 | **ND** | 0.057 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1232 | **ND** | 0.057 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1242 | **ND** | 0.057 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1248 | **ND** | 0.057 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1254 | **ND** | 0.057 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1260 | **ND** | 0.057 | EPA 8082A | 7-3-19 | 7-3-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***DCB*** | ***76*** | ***37-122*** | | | | |
| | | | | | | |
| **Client ID:** | **Ditch-4-0** | | | | | |
| Laboratory ID: | 06-324-11 | | | | | |
| Aroclor 1016 | **ND** | 0.057 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1221 | **ND** | 0.057 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1232 | **ND** | 0.057 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1242 | **ND** | 0.057 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1248 | **ND** | 0.057 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1254 | **ND** | 0.057 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1260 | **ND** | 0.057 | EPA 8082A | 7-3-19 | 7-3-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***DCB*** | ***88*** | ***37-122*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PCBs EPA 8082A**
**QUALITY CONTROL**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0703S1 | | | | | |
| Aroclor 1016 | **ND** | 0.050 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1221 | **ND** | 0.050 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1232 | **ND** | 0.050 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1242 | **ND** | 0.050 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1248 | **ND** | 0.050 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1254 | **ND** | 0.050 | EPA 8082A | 7-3-19 | 7-3-19 | |
| Aroclor 1260 | **ND** | 0.050 | EPA 8082A | 7-3-19 | 7-3-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***DCB*** | ***90*** | ***37-122*** | | | | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SPIKE BLANKS** | | | | | | | | | | | |
| Laboratory ID: | SB0703S1 | | | | | | | | | | |
| | SB | SBD | SB | SBD | | SB | SBD | | | | |
| Aroclor 1260 | **0.540** | **0.550** | 0.500 | 0.500 | N/A | **108** | **110** | 49-120 | 2 | 18 | |
| ***Surrogate:*** | | | | | | | | | | | |
| ***DCB*** | | | | | | ***93*** | ***89*** | ***37-122*** | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PCBs EPA 8082A**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-A-3** | | | | | |
| Laboratory ID: | 06-324-01 | | | | | |
| Aroclor 1016 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1221 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1232 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1242 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1248 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1254 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1260 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***DCB*** | ***77*** | ***37-122*** | | | | |
| **Client ID:** | **TP-B-4** | | | | | |
| Laboratory ID: | 06-324-02 | | | | | |
| Aroclor 1016 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1221 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1232 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1242 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1248 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1254 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1260 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***DCB*** | ***89*** | ***37-122*** | | | | |
| **Client ID:** | **TP-D-1.5** | | | | | |
| Laboratory ID: | 06-324-04 | | | | | |
| Aroclor 1016 | **ND** | 0.058 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1221 | **ND** | 0.058 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1232 | **ND** | 0.058 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1242 | **ND** | 0.058 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1248 | **ND** | 0.058 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1254 | **ND** | 0.058 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1260 | **ND** | 0.058 | EPA 8082A | 7-12-19 | 7-12-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***DCB*** | ***82*** | ***37-122*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PCBs EPA 8082A**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-E-2** | | | | | |
| Laboratory ID: | 06-324-05 | | | | | |
| Aroclor 1016 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1221 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1232 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1242 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1248 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1254 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1260 | **ND** | 0.057 | EPA 8082A | 7-12-19 | 7-12-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***DCB*** | ***80*** | ***37-122*** | | | | |
| **Client ID:** | **TP-F-2.5** | | | | | |
| Laboratory ID: | 06-324-06 | | | | | |
| Aroclor 1016 | **ND** | 0.058 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1221 | **ND** | 0.058 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1232 | **ND** | 0.058 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1242 | **ND** | 0.058 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1248 | **ND** | 0.058 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1254 | **ND** | 0.058 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1260 | **0.066** | 0.058 | EPA 8082A | 7-12-19 | 7-12-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***DCB*** | ***76*** | ***37-122*** | | | | |
| **Client ID:** | **TP-K-1** | | | | | |
| Laboratory ID: | 06-324-07 | | | | | |
| Aroclor 1016 | **ND** | 0.056 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1221 | **ND** | 0.056 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1232 | **ND** | 0.056 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1242 | **ND** | 0.056 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1248 | **ND** | 0.056 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1254 | **ND** | 0.056 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1260 | **ND** | 0.056 | EPA 8082A | 7-12-19 | 7-12-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***DCB*** | ***88*** | ***37-122*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PCBs EPA 8082A**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-2-0** | | | | | |
| Laboratory ID: | 06-324-09 | | | | | |
| Aroclor 1016 | **ND** | 0.054 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1221 | **ND** | 0.054 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1232 | **ND** | 0.054 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1242 | **ND** | 0.054 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1248 | **ND** | 0.054 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1254 | **ND** | 0.054 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1260 | **ND** | 0.054 | EPA 8082A | 7-12-19 | 7-12-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***DCB*** | ***91*** | ***37-122*** | | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**PCBs EPA 8082A**
**QUALITY CONTROL**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0712S1 | | | | | |
| Aroclor 1016 | **ND** | 0.050 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1221 | **ND** | 0.050 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1232 | **ND** | 0.050 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1242 | **ND** | 0.050 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1248 | **ND** | 0.050 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1254 | **ND** | 0.050 | EPA 8082A | 7-12-19 | 7-12-19 | |
| Aroclor 1260 | **ND** | 0.050 | EPA 8082A | 7-12-19 | 7-12-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***DCB*** | ***96*** | ***37-122*** | | | | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SPIKE BLANKS** | | | | | | | | | | | |
| Laboratory ID: | SB0712S1 | | | | | | | | | | |
| | SB | SBD | SB | SBD | | SB | SBD | | | | |
| Aroclor 1260 | **0.511** | **0.447** | 0.500 | 0.500 | N/A | **102** | **89** | 49-120 | 13 | 18 | |
| ***Surrogate:*** | | | | | | | | | | | |
| ***DCB*** | | | | | | ***99*** | ***105*** | ***37-122*** | | | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**TOTAL METALS**
**EPA 6010D**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Ditch-3-0** | | | | | |
| Laboratory ID: | 06-324-10 | | | | | |
| Cadmium | **ND** | 0.57 | EPA 6010D | 7-1-19 | 7-1-19 | |
| Chromium | **18** | 0.57 | EPA 6010D | 7-1-19 | 7-1-19 | |
| Lead | **19** | 5.7 | EPA 6010D | 7-1-19 | 7-1-19 | |
| Nickel | **19** | 2.9 | EPA 6010D | 7-1-19 | 7-1-19 | |
| Zinc | **51** | 2.9 | EPA 6010D | 7-1-19 | 7-1-19 | |
| **Client ID:** | **Ditch-4-0** | | | | | |
| Laboratory ID: | 06-324-11 | | | | | |
| Cadmium | **ND** | 0.57 | EPA 6010D | 7-1-19 | 7-1-19 | |
| Chromium | **21** | 0.57 | EPA 6010D | 7-1-19 | 7-1-19 | |
| Lead | **15** | 5.7 | EPA 6010D | 7-1-19 | 7-1-19 | |
| Nickel | **23** | 2.8 | EPA 6010D | 7-1-19 | 7-1-19 | |
| Zinc | **52** | 2.8 | EPA 6010D | 7-1-19 | 7-1-19 | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**TOTAL METALS**
**EPA 6010D**
**QUALITY CONTROL**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0701SM3 | | | | | |
| Cadmium | **ND** | 0.50 | EPA 6010D | 7-1-19 | 7-1-19 | |
| Chromium | **ND** | 0.50 | EPA 6010D | 7-1-19 | 7-1-19 | |
| Lead | **ND** | 5.0 | EPA 6010D | 7-1-19 | 7-1-19 | |
| Nickel | **ND** | 2.5 | EPA 6010D | 7-1-19 | 7-1-19 | |
| Zinc | **ND** | 2.5 | EPA 6010D | 7-1-19 | 7-1-19 | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | |
| Laboratory ID: | 06-309-06 | | | | | | | | | |
| | ORIG | DUP | | | | | | | | |
| Cadmium | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| Chromium | **53.3** | **52.6** | NA | NA | | NA | NA | 1 | 20 | |
| Lead | **7.30** | **6.65** | NA | NA | | NA | NA | 9 | 20 | |
| Nickel | **57.1** | **57.6** | NA | NA | | NA | NA | 1 | 20 | |
| Zinc | **59.7** | **59.6** | NA | NA | | NA | NA | 0 | 20 | |
| **MATRIX SPIKES** | | | | | | | | | | |
| Laboratory ID: | 06-309-06 | | | | | | | | | |
| | MS | MSD | MS | MSD | | MS | MSD | | | |
| Cadmium | **48.5** | **49.0** | 50.0 | 50.0 | ND | **97** | **98** | 75-125 | 1 | 20 |
| Chromium | **145** | **148** | 100 | 100 | 53.3 | **92** | **94** | 75-125 | 2 | 20 |
| Lead | **227** | **230** | 250 | 250 | 7.30 | **88** | **89** | 75-125 | 1 | 20 |
| Nickel | **149** | **150** | 100 | 100 | 57.1 | **92** | **93** | 75-125 | 1 | 20 |
| Zinc | **156** | **159** | 100 | 100 | 59.7 | **96** | **100** | 75-125 | 2 | 20 |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**TOTAL METALS**
**EPA 6010D**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-A-3** | | | | | |
| Laboratory ID: | 06-324-01 | | | | | |
| Cadmium | **ND** | 0.57 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Chromium | **17** | 0.57 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Lead | **32** | 5.7 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Nickel | **17** | 2.8 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Zinc | **95** | 2.8 | EPA 6010D | 7-8-19 | 7-8-19 | |
| **Client ID:** | **TP-B-4** | | | | | |
| Laboratory ID: | 06-324-02 | | | | | |
| Cadmium | **ND** | 0.57 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Chromium | **17** | 0.57 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Lead | **12** | 5.7 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Nickel | **20** | 2.9 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Zinc | **42** | 2.9 | EPA 6010D | 7-8-19 | 7-8-19 | |
| **Client ID:** | **TP-D-1.5** | | | | | |
| Laboratory ID: | 06-324-04 | | | | | |
| Cadmium | **ND** | 0.58 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Chromium | **18** | 0.58 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Lead | **19** | 5.8 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Nickel | **19** | 2.9 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Zinc | **55** | 2.9 | EPA 6010D | 7-8-19 | 7-8-19 | |
| **Client ID:** | **TP-E-2** | | | | | |
| Laboratory ID: | 06-324-05 | | | | | |
| Cadmium | **0.57** | 0.57 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Chromium | **21** | 0.57 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Lead | **410** | 5.7 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Nickel | **20** | 2.8 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Zinc | **81** | 2.8 | EPA 6010D | 7-8-19 | 7-8-19 | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**TOTAL METALS**
**EPA 6010D**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-F-2.5** | | | | | |
| Laboratory ID: | 06-324-06 | | | | | |
| Cadmium | **2.6** | 0.58 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Chromium | **28** | 0.58 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Lead | **3600** | 29 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Nickel | **22** | 2.9 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Zinc | **130** | 2.9 | EPA 6010D | 7-8-19 | 7-8-19 | |
| **Client ID:** | **TP-K-1** | | | | | |
| Laboratory ID: | 06-324-07 | | | | | |
| Cadmium | **ND** | 0.56 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Chromium | **20** | 0.56 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Lead | **110** | 5.6 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Nickel | **20** | 2.8 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Zinc | **35** | 2.8 | EPA 6010D | 7-8-19 | 7-8-19 | |
| **Client ID:** | **Ditch-2-0** | | | | | |
| Laboratory ID: | 06-324-09 | | | | | |
| Cadmium | **ND** | 0.54 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Chromium | **22** | 0.54 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Lead | **6.6** | 5.4 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Nickel | **22** | 2.7 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Zinc | **35** | 2.7 | EPA 6010D | 7-8-19 | 7-8-19 | |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**TOTAL METALS**
**EPA 6010D**
**QUALITY CONTROL**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0708SM1 | | | | | |
| Cadmium | **ND** | 0.50 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Chromium | **ND** | 0.50 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Lead | **ND** | 5.0 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Nickel | **ND** | 2.5 | EPA 6010D | 7-8-19 | 7-8-19 | |
| Zinc | **ND** | 2.5 | EPA 6010D | 7-8-19 | 7-8-19 | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | |
| Laboratory ID: | 06-324-01 | | | | | | | | | |
| | ORIG | DUP | | | | | | | | |
| Cadmium | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| Chromium | **15.3** | **13.7** | NA | NA | | NA | NA | 11 | 20 | |
| Lead | **28.4** | **32.6** | NA | NA | | NA | NA | 14 | 20 | |
| Nickel | **15.0** | **15.5** | NA | NA | | NA | NA | 3 | 20 | |
| Zinc | **84.0** | **80.8** | NA | NA | | NA | NA | 4 | 20 | |
| **MATRIX SPIKES** | | | | | | | | | | |
| Laboratory ID: | 06-324-01 | | | | | | | | | |
| | MS | MSD | MS | MSD | | MS | MSD | | | |
| Cadmium | **44.7** | **45.1** | 50.0 | 50.0 | ND | **89** | **90** | 75-125 | 1 | 20 |
| Chromium | **108** | **110** | 100 | 100 | 15.3 | **93** | **95** | 75-125 | 2 | 20 |
| Lead | **248** | **252** | 250 | 250 | 28.4 | **88** | **90** | 75-125 | 2 | 20 |
| Nickel | **105** | **106** | 100 | 100 | 15.0 | **90** | **91** | 75-125 | 2 | 20 |
| Zinc | **174** | **177** | 100 | 100 | 84.0 | **90** | **93** | 75-125 | 2 | 20 |



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Date of Report: July 12, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324
Project: 16-06310-011

**% MOISTURE**

| Client ID | Lab ID | % Moisture | Date Analyzed |
|---|---|---|---|
| **TP-A-3** | 06-324-01 | **12** | 7-1-19 |
| **TP-B-4** | 06-324-02 | **12** | 7-1-19 |
| **TP-C-2** | 06-324-03 | **11** | 7-1-19 |
| **TP-D-1.5** | 06-324-04 | **15** | 7-1-19 |
| **TP-E-2** | 06-324-05 | **12** | 7-1-19 |
| **TP-F-2.5** | 06-324-06 | **14** | 7-1-19 |
| **TP-K-1** | 06-324-07 | **10** | 7-1-19 |
| **Ditch-1-0** | 06-324-08 | **3** | 7-1-19 |
| **Ditch-2-0** | 06-324-09 | **8** | 7-1-19 |
| **Ditch-3-0** | 06-324-10 | **13** | 7-1-19 |
| **Ditch-4-0** | 06-324-11 | **12** | 7-1-19 |



This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

**Data Qualifiers and Abbreviations**

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

# Chain of Custody

Page 1 of 2

**OnSite Environmental Inc.**
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: Herrera Env. Cons.
Project Number: 16-06310-011
Project Name: Prairie Pit
Project Manager: George Iftner
Sampled by: George Iftner

**Turnaround Request (in working days)**
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☑ Standard (7 Days)
☐ _____ (other)

**Laboratory Number:** 06-324

| Lab ID | Sample Identification | Date Sampled | Time Sampled | Matrix | Number of Containers | NWTPH-HCID | NWTPH-Gx/BTEX/EDB/EDC/MeTBE TBA, TAME, ETBE | NWTPH-Gx | NWTPH-Dx (Acid / SG Clean-up) | Volatiles 8260C | Halogenated Volatiles 8260C | EDB EPA 8011 (Waters Only) | Semivolatiles 8270D/SIM (with low-level PAHs) | PAHs 8270D/SIM (low-level) * | PCBs 8082A | Organochlorine Pesticides 8081B | Organophosphorus Pesticides 8270D/SIM | Chlorinated Acid Herbicides 8151A | Total RCRA Metals | Total MTCA Metals | TCLP Metals | HEM (oil and grease) 1664A | Total Metals (Cd, Cr, Pb, Ni, Zn) | | | | % Moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TP-A-3 | 6/27/19 | 10:00 | Soil | 6 | ✓ | | | X | | | | | X | X | | | | | | | | X | | | | 10 |
| 2 | TP-B-4 | | 10:30 | | 6 | ✓ | | | X | | | | | X | X | | | | | | | | X | | | | |
| 3 | TP-C-2 | | 11:00 | | 6 | ✓ | | | | | | | | | | | | | | | | | | | | | |
| 4 | TP-D-1.5 | | 11:40 | | 6 | ✓ | X | | X | | X | | | X | X | | | | | | | | X | | | | |
| 5 | TP-E-2 | | 12:15 | | 6 | ✓ | X | | X | | X | | | X | X | | | | | | | | X | | | | |
| 6 | TP-F-2.5 | | 12:45 | | 6 | ✓ | X | | X | | X | | | X | X | | | | | | | | X | | | | |
| 7 | TP-K-1 | | 14:40 | | 6 | ✓ | | | X | | | | | X | X | | | | | | | | X | | | | |
| 8 | Ditch-1-0 | | 15:50 | | 6 | ✓ | | | | | VOIDS | | | | | | | | | | | | | | | | |
| 9 | Ditch-2-0 | | 16:20 | | 6 | ✓ | X | | X | | X | | | X | X | | | | | | | | X | | | | |
| 10 | Ditch-3-0 | ↓ | 16:50 | ↓ | 6 | | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | | | | | | | | ✓ | | | | |

| | Signature | Company | Date | Time |
|---|---|---|---|---|
| Relinquished | George Iftner | Herrera | 6/28/19 | 12:45 |
| Received | | ORE | 6/28/19 | 1245 |
| Relinquished | | | | |
| Received | | | | |
| Relinquished | | | | |
| Received | | | | |
| Reviewed/Date | | Reviewed/Date | | |

**Comments/Special Instructions**
Hold samples for other analyses after HCID

* Report cPAHs + Naphthalenes
(X) Added 7/3/19. DB (STA Only)

Data Package: Standard ☐ Level III ☐ Level IV ☐
Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

# Chain of Custody



**OnSite Environmental Inc.**
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: Herrera Env. Cons.
Project Number: 16-06310-011
Project Name: Prairie Pit
Project Manager: George Ifthen
Sampled by: George Ifthen

**Turnaround Request (in working days)**
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☑ Standard (7 Days)
☐ _____ (other)

**Laboratory Number:** 06-324

| Lab ID | Sample Identification | Date Sampled | Time Sampled | Matrix | Number of Containers | NWTPH-HCID | NWTPH-Gx/BTEX (EDB/EDC/MTBE TBA, TAME, ETBE) | NWTPH-Gx | NWTPH-Dx (☑ Acid / SG Clean-up) | Volatiles 8260C | Halogenated Volatiles 8260C | EDB EPA 8011 (Waters Only) | Semivolatiles 8270D/SIM (with low-level PAHs) | PAHs 8270D/SIM (low-level) * | PCBs 8082A | Organochlorine Pesticides 8081B | Organophosphorus Pesticides 8270D/SIM | Chlorinated Acid Herbicides 8151A | Total RCRA Metals | Total MTCA Metals | TCLP Metals | HEM (oil and grease) 1664A | Total Metals (Cd, Cr, Pb, Ni, Zn) | | | | % Moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | Ditch-4-0 | 6/27/19 | 17:20 | soil | 6 | | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | | | | | | | | | ✓ | | | | ✓ |
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| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | Signature | Company | Date | Time |
|---|---|---|---|---|
| Relinquished | George Ifthen | Herrera | 6/28/19 | 12:45 |
| Received | | COC | 6/28/19 | 1245 |
| Relinquished | | | | |
| Received | | | | |
| Relinquished | | | | |
| Received | | | | |
| Reviewed/Date | | Reviewed/Date | | |

**Comments/Special Instructions**

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

July 22, 2019

George Iftner
Herrera Environmental Consultants, Inc.
2200 6th Avenue, Suite 1100
Seattle, WA 98121

Re: Analytical Data for Project 16-06310-011
Laboratory Reference No. 1906-324B

Dear George:

Enclosed are the analytical results and associated quality control data for samples submitted on June 28, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 22, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324B
Project: 16-06310-011

**Case Narrative**

Samples were collected on June 27, 2019 and received by the laboratory on June 28, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 22, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324B
Project: 16-06310-011

**SOLUBLE HEXAVALENT CHROMIUM**
**WATER EXTRACTION**
**EPA 7196A**

Matrix: Soil
Units: mg/Kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-E-2** | | | | | |
| Laboratory ID: | 06-324-05 | | | | | |
| Hexavalent Chromium | **ND** | 1.1 | EPA 7196A mod. | 7-22-19 | 7-22-19 | |
| **Client ID:** | **TP-F-2.5** | | | | | |
| Laboratory ID: | 06-324-06 | | | | | |
| Hexavalent Chromium | **ND** | 1.2 | EPA 7196A mod. | 7-22-19 | 7-22-19 | |
| **Client ID:** | **TP-K-1** | | | | | |
| Laboratory ID: | 06-324-07 | | | | | |
| Hexavalent Chromium | **ND** | 1.1 | EPA 7196A mod. | 7-22-19 | 7-22-19 | |
| **Client ID:** | **Ditch-2-0** | | | | | |
| Laboratory ID: | 06-324-09 | | | | | |
| Hexavalent Chromium | **ND** | 1.1 | EPA 7196A mod. | 7-22-19 | 7-22-19 | |
| **Client ID:** | **Ditch-4-0** | | | | | |
| Laboratory ID: | 06-324-11 | | | | | |
| Hexavalent Chromium | **ND** | 1.1 | EPA 7196A mod. | 7-22-19 | 7-22-19 | |



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Date of Report: July 22, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324B
Project: 16-06310-011

**SOLUBLE HEXAVALENT CHROMIUM**
**WATER EXTRACTION**
**EPA 7196A**
**QUALITY CONTROL**

Matrix: Soil
Units: mg/Kg

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0722S1 | | | | | |
| Hexavalent Chromium | **ND** | 1.0 | EPA 7196A mod. | 7-22-19 | 7-22-19 | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | | |
| Laboratory ID: | 06-324-05 | | | | | | | | | | |
| | ORIG | DUP | | | | | | | | | |
| Hexavalent Chromium | **ND** | **ND** | NA | | NA | NA | | NA | NA | 20 | |
| **MATRIX SPIKES** | | | | | | | | | | | |
| Laboratory ID: | 06-324-05 | | | | | | | | | | |
| | MS | MSD | MS | MSD | | MS | MSD | | | | |
| Hexavalent Chromium | **3.15** | **3.04** | 5.00 | 5.00 | ND | 63 | 61 | 75-125 | 4 | 20 | V |
| **SPIKE BLANK** | | | | | | | | | | | |
| Laboratory ID: | SB0722S1 | | | | | | | | | | |
| | SB | | SB | | | SB | | | | | |
| Hexavalent Chromium | **4.32** | | 5.00 | | NA | 86 | | 75-125 | NA | NA | |



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Date of Report: July 22, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324B
Project: 16-06310-011

**TCLP LEAD**
**EPA 1311/6010D**

Matrix: TCLP Extract
Units: mg/L (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-F-2.5** | | | | | |
| Laboratory ID: | 06-324-06 | | | | | |
| Lead | **6.4** | 0.20 | EPA 6010D | 7-19-19 | 7-22-19 | |



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Date of Report: July 22, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324B
Project: 16-06310-011

**TCLP LEAD**
**EPA 1311/6010D**
**QUALITY CONTROL**

Matrix: TCLP Extract
Units: mg/L (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0722TM1 | | | | | |
| Lead | **ND** | 0.20 | EPA 6010D | 7-19-19 | 7-22-19 | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | | |
| Laboratory ID: | 07-083-01 | | | | | | | | | | |
| | ORIG | DUP | | | | | | | | | |
| Lead | **0.272** | **0.242** | NA | NA | | NA | | NA | 12 | 20 | |
| **MATRIX SPIKES** | | | | | | | | | | | |
| Laboratory ID: | 07-083-01 | | | | | | | | | | |
| | MS | MSD | MS | MSD | | MS | MSD | | | | |
| Lead | **9.30** | **9.30** | 10.0 | 10.0 | 0.272 | **90** | **90** | 75-125 | 0 | 20 | |



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OnSite Environmental Inc.

**Data Qualifiers and Abbreviations**

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

# Chain of Custody



**OnSite Environmental Inc.**
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: Herrera Env. Cons.
Project Number: 16-06310-011
Project Name: Prairie Pit
Project Manager: George Iftner
Sampled by: George Iftner

**Turnaround Request (in working days)**
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☑ Standard (7 Days)
☐ _____ (other)

**Laboratory Number:** 06-324

| Lab ID | Sample Identification | Date Sampled | Time Sampled | Matrix | Number of Containers | NWTPH-HCID | NWTPH-Gx/BTEX (EDB/EDC/MeTBE TBA, TAME, ETBE) | NWTPH-Gx | NWTPH-Dx (Acid / SG Clean-up) | Volatiles 8260C | Halogenated Volatiles 8260C | EDB EPA 8011 (Waters Only) | Semivolatiles 8270D/SIM (with low-level PAHs) | PAHs 8270D/SIM (low-level) * | PCBs 8082A | Organochlorine Pesticides 8081B | Organophosphorus Pesticides 8270D/SIM | Chlorinated Acid Herbicides 8151A | Total RCRA Metals | Total MTCA Metals | TCLP Metals (LEAD only) | HEM (oil and grease) 1664A | Total Metals (Cd, Cr, Pb, Ni, Zn) Hex chrome | | | | % Moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TP-A-3 | 6/27/19 | 10:00 | Soil | 6 | ✓ | | | X | | | | | X | X | | | | | | | | | X | | | | 8 |
| 2 | TP-B-4 | | 10:30 | | 6 | ✓ | | | X | | | | | X | X | | | | | | | | | X | | | | |
| 3 | TP-C-2 | | 11:00 | | 6 | ✓ | | | | | | | | | | | | | | | | | | | | | | |
| 4 | TP-D-1.5 | | 11:40 | | 6 | ✓ | X | | X | | X | | | X | X | | | | | | | | | X | | | | |
| 5 | TP-E-2 | | 12:15 | | 6 | ✓ | X | | X | | X | | | X | X | | | | | | | | | X | O | | | |
| 6 | TP-F-2.5 | | 12:45 | | 6 | ✓ | X | | X | | X | | | X | X | | | | | | | ● | | X | O | | | |
| 7 | TP-K-1 | | 14:40 | | 6 | ✓ | | | X | | | | | X | X | | | | | | | | | X | O | | | |
| 8 | Ditch-1-0 | | 15:50 | | 6 | ✓ | | | | | VOA | | | | | | | | | | | | | | | | | |
| 9 | Ditch-2-0 | | 16:20 | | 6 | ✓ | X | | X | | X | | | X | X | | | | | | | | | X | O | | | |
| 10 | Ditch-3-0 | ↓ | 16:50 | ↓ | 6 | | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | | | | | | | | | ✓ | | | | |

| | Signature | Company | Date | Time |
|---|---|---|---|---|
| Relinquished | George Iftner | Herrera | 6/28/19 | 12:45 |
| Received | | ORE | 6/28/19 | 1245 |
| Relinquished | | | | |
| Received | | | | |
| Relinquished | | | | |
| Received | | | | |
| Reviewed/Date | | Reviewed/Date | | |

**Comments/Special Instructions**

Hold samples for other analyses after HCID

* Report cPAHs + Naphthalenes

(X) Added 7/3/19. DB (STA only)

O - Added 7/17/19. DB (STA) 3 day TAT

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

● Added 7/19/19. DB (2 day TAT)

# Chain of Custody



**OnSite Environmental Inc.**
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: Herrera Env. Cons.
Project Number: 16-06310-011
Project Name: Prairie Pit
Project Manager: George Ifthen
Sampled by: George Ifthen

**Turnaround Request (in working days)**
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☑ Standard (7 Days)
☐ _____ (other)

**Laboratory Number:** 06-324

| Lab ID | Sample Identification | Date Sampled | Time Sampled | Matrix | Number of Containers | NWTPH-HCID | NWTPH-Gx/BTEX (EDB/EDC/MTBE TBA, TAME, ETBE) | NWTPH-Gx | NWTPH-Dx (☑ Acid / SG Clean-up) | Volatiles 8260C | Halogenated Volatiles 8260C | EDB EPA 8011 (Waters Only) | Semivolatiles 8270D/SIM (with low-level PAHs) | PAHs 8270D/SIM (low-level) * | PCBs 8082A | Organochlorine Pesticides 8081B | Organophosphorus Pesticides 8270D/SIM | Chlorinated Acid Herbicides 8151A | Total RCRA Metals | Total MTCA Metals | TCLP Metals | HEM (oil and grease) 1664A | Total metals (Cd, Cr, Pb, Ni, Zn) | Hex chrome | | | % Moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | Ditch-4-0 | 6/27/19 | 17:20 | soil | 6 | | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | | | | | | | | ✓ | 0 | | | 8 |
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| | Signature | Company | Date | Time |
|---|---|---|---|---|
| Relinquished | George Ifthen | Herrera | 6/28/19 | 12:45 |
| Received | | COC | 6/28/19 | 1245 |
| Relinquished | | | | |
| Received | | | | |
| Relinquished | | | | |
| Received | | | | |
| Reviewed/Date | | Reviewed/Date | | |

**Comments/Special Instructions**

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 19, 2019

George Iftner
Herrera Environmental Consultants, Inc.
2200 6th Avenue, Suite 1100
Seattle, WA 98121

Re: Analytical Data for Project 16-06310-011
Laboratory Reference No. 1906-324C

Dear George:

Enclosed are the analytical results and associated quality control data for samples submitted on June 28, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 19, 2019
Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324C
Project: 16-06310-011

**Case Narrative**

Samples were collected on June 27, 2019 and received by the laboratory on June 28, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



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**TCLP LEAD**
**EPA 1311/6010D**

Matrix: TCLP Extract
Units: mg/L (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-K-1** | | | | | |
| Laboratory ID: | 06-324-07 | | | | | |
| Lead | **ND** | 0.20 | EPA 6010D | 8-16-19 | 8-16-19 | |



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Project: 16-06310-011

**TCLP LEAD**
**EPA 1311/6010D**
**QUALITY CONTROL**

Matrix: TCLP Extract
Units: mg/L (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0816TM1 | | | | | |
| Lead | **ND** | 0.20 | EPA 6010D | 8-16-19 | 8-16-19 | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | | |
| Laboratory ID: | 06-324-07 | | | | | | | | | | |
| | ORIG | DUP | | | | | | | | | |
| Lead | **ND** | **ND** | NA | NA | | NA | | NA | NA | 20 | |
| **MATRIX SPIKES** | | | | | | | | | | | |
| Laboratory ID: | 06-324-07 | | | | | | | | | | |
| | MS | MSD | MS | MSD | | MS | MSD | | | | |
| Lead | **9.69** | **9.75** | 10.0 | 10.0 | ND | **97** | **98** | 75-125 | 1 | 20 | |



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Project: 16-06310-011

**TOTAL METALS**
**EPA 6010D**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **TP-C-2** | | | | | |
| Laboratory ID: | 06-324-03 | | | | | |
| Cadmium | **ND** | 0.56 | EPA 6010D | 8-16-19 | 8-16-19 | |
| Chromium | **16** | 0.56 | EPA 6010D | 8-16-19 | 8-16-19 | |
| Lead | **ND** | 5.6 | EPA 6010D | 8-16-19 | 8-16-19 | |
| Nickel | **18** | 2.8 | EPA 6010D | 8-16-19 | 8-16-19 | |
| Zinc | **35** | 2.8 | EPA 6010D | 8-16-19 | 8-16-19 | |
| **Client ID:** | **Ditch-1-0** | | | | | |
| Laboratory ID: | 06-324-08 | | | | | |
| Cadmium | **ND** | 0.52 | EPA 6010D | 8-16-19 | 8-16-19 | |
| Chromium | **15** | 0.52 | EPA 6010D | 8-16-19 | 8-16-19 | |
| Lead | **ND** | 5.2 | EPA 6010D | 8-16-19 | 8-16-19 | |
| Nickel | **29** | 2.6 | EPA 6010D | 8-16-19 | 8-16-19 | |
| Zinc | **28** | 2.6 | EPA 6010D | 8-16-19 | 8-16-19 | |



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Samples Submitted: June 28, 2019
Laboratory Reference: 1906-324C
Project: 16-06310-011

**TOTAL METALS**
**EPA 6010D**
**QUALITY CONTROL**

Matrix: Soil
Units: mg/Kg (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0816SM3 | | | | | |
| Cadmium | **ND** | 0.50 | EPA 6010D | 8-16-19 | 8-16-19 | |
| Chromium | **ND** | 0.50 | EPA 6010D | 8-16-19 | 8-16-19 | |
| Lead | **ND** | 5.0 | EPA 6010D | 8-16-19 | 8-16-19 | |
| Nickel | **ND** | 2.5 | EPA 6010D | 8-16-19 | 8-16-19 | |
| Zinc | **ND** | 2.5 | EPA 6010D | 8-16-19 | 8-16-19 | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | |
| Laboratory ID: | 08-186-01 | | | | | | | | | |
| | ORIG | DUP | | | | | | | | |
| Cadmium | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| Chromium | **33.0** | **30.5** | NA | NA | | NA | NA | 8 | 20 | |
| Lead | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| Nickel | **41.1** | **38.2** | NA | NA | | NA | NA | 7 | 20 | |
| Zinc | **26.6** | **24.9** | NA | NA | | NA | NA | 7 | 20 | |
| **MATRIX SPIKES** | | | | | | | | | | |
| Laboratory ID: | 08-186-01 | | | | | | | | | |
| | MS | MSD | MS | MSD | | MS | MSD | | | |
| Cadmium | **43.9** | **44.8** | 50.0 | 50.0 | ND | **88** | **90** | 75-125 | 2 | 20 |
| Chromium | **125** | **124** | 100 | 100 | 33.0 | **92** | **91** | 75-125 | 1 | 20 |
| Lead | **223** | **227** | 250 | 250 | ND | **89** | **91** | 75-125 | 2 | 20 |
| Nickel | **131** | **134** | 100 | 100 | 41.1 | **90** | **93** | 75-125 | 2 | 20 |
| Zinc | **119** | **120** | 100 | 100 | 26.6 | **93** | **94** | 75-125 | 1 | 20 |



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OnSite Environmental Inc.

**Data Qualifiers and Abbreviations**

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference



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# Chain of Custody



**OnSite Environmental Inc.**
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: Herrera Env. Cons.
Project Number: 16-06310-011
Project Name: Prairie Pit
Project Manager: George Iftner
Sampled by: George Iftner

**Turnaround Request (in working days)**
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☑ Standard (7 Days)
☐ _____ (other)

**Laboratory Number:** 06-324

| Lab ID | Sample Identification | Date Sampled | Time Sampled | Matrix | Number of Containers | NWTPH-HCID | NWTPH-Gx/BTEX (EDB/EDC/MeTBE TBA, TAME, ETBE) | NWTPH-Gx | NWTPH-Dx (Acid / SG Clean-up) | Volatiles 8260C | Halogenated Volatiles 8260C | EDB EPA 8011 (Waters Only) | Semivolatiles 8270D/SIM (with low-level PAHs) | PAHs 8270D/SIM (low-level) * | PCBs 8082A | Organochlorine Pesticides 8081B | Organophosphorus Pesticides 8270D/SIM | Chlorinated Acid Herbicides 8151A | Total RCRA Metals | Total MTCA Metals | TCLP Metals (LEAD only) | HEM (oil and grease) 1664A | Total Metals (Cd, Cr, Pb, Ni, Zn) Hex chrome | | | | % Moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TP-A-3 | 6/27/19 | 10:00 | Soil | 6 | ✓ | | | X | | | | X | X | X | | | | | | | | X | | | | 8 |
| 2 | TP-B-4 | | 10:30 | | 6 | ✓ | | | X | | | | X | X | X | | | | | | | | X | | | | |
| 3 | TP-C-2 | | 11:00 | | 6 | ✓ | | | | | | | | | | | | | | | | | Θ | | | | |
| 4 | TP-D-1.5 | | 11:40 | | 6 | ✓ | X | | X | | X | | | X | X | | | | | | | | X | | | | |
| 5 | TP-E-2 | | 12:15 | | 6 | ✓ | X | | X | | X | | | X | X | | | | | | | | X | O | | | |
| 6 | TP-F-2.5 | | 12:45 | | 6 | ✓ | X | | X | | X | | | X | X | | | | | | | ● | X | O | | | |
| 7 | TP-K-1 | | 14:40 | | 6 | ✓ | | | X | | | | | X | X | | | | | | | Θ | X | O | | | |
| 8 | Ditch-1-0 | | 15:50 | | 6 | ✓ | | | | | VOA | | | | | | | | | | | | Θ | | | | |
| 9 | Ditch-2-0 | | 16:20 | | 6 | ✓ | X | | X | | X | | | X | X | | | | | | | | X | O | | | |
| 10 | Ditch-3-0 | ↓ | 16:50 | ↓ | 6 | | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | | | | | | | | ✓ | | | | |

| | Signature | Company | Date | Time |
|---|---|---|---|---|
| Relinquished | George Iftner | Herrera | 6/28/19 | 12:45 |
| Received | | ORE | 6/28/19 | 1245 |
| Relinquished | | | | |
| Received | | | | |
| Relinquished | | | | |
| Received | | | | |
| Reviewed/Date | | Reviewed/Date | | |

**Comments/Special Instructions**

Hold samples for other analyses after HCID

* Report cPAHs + Naphthalenes

(X) Added 7/3/19. DB (5 TAT only)

O - Added 7/17/19. DB (~~5~~ 3 day TAT)

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

Θ Added 8/14/19. DB (3 day TAT)

● Added 7/19/19. DB (2 day TAT)

# Chain of Custody



**OnSite Environmental Inc.**
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: Herrera Env. Cons.
Project Number: 16-06310-011
Project Name: Prairie Pit
Project Manager: George Ifther
Sampled by: George Ifther

**Turnaround Request (in working days)**
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☑ Standard (7 Days)
☐ _____ (other)

**Laboratory Number:** 06-324

| Lab ID | Sample Identification | Date Sampled | Time Sampled | Matrix | Number of Containers | NWTPH-HCID | NWTPH-Gx/BTEX (EDB/EDC/MTBE TBA, TAME, ETBE) | NWTPH-Gx | NWTPH-Dx (☑ Acid / SG Clean-up) | Volatiles 8260C | Halogenated Volatiles 8260C | EDB EPA 8011 (Waters Only) | Semivolatiles 8270D/SIM (with low-level PAHs) | PAHs 8270D/SIM (low-level) * | PCBs 8082A | Organochlorine Pesticides 8081B | Organophosphorus Pesticides 8270D/SIM | Chlorinated Acid Herbicides 8151A | Total RCRA Metals | Total MTCA Metals | TCLP Metals | HEM (oil and grease) 1664A | Total Metals (Cd, Cr, Pb, Ni, Zn) | Hex Chrome | | | % Moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | Ditch-4-0 | 6/27/19 | 17:20 | Soil | 6 | | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | | | | | | | | ✓ | O | | | 8 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | Signature | Company | Date | Time |
|---|---|---|---|---|
| Relinquished | George Ifther | Herrera | 6/28/19 | 12:45 |
| Received | | COS | 6/28/19 | 1248 |
| Relinquished | | | | |
| Received | | | | |
| Relinquished | | | | |
| Received | | | | |
| Reviewed/Date | | Reviewed/Date | | |

**Comments/Special Instructions**

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

Libby Environmental, Inc.
3322 South Bay Road NE • Olympia, WA 98506-2957

August 2, 2019

George Iftner
Herrera Environmental
2200 6th Avenue, Suite 1100
Seattle, WA 98121

Dear Mr. Iftner:

Please find enclosed the analytical data report for the Prairie Pit Project located in Fredrickson, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
*Senior Chemist*
*Libby Environmental, Inc.*

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

# Libby Environmental, Inc.

# Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 7/25/19 Page: 1 of 1

Client: Herrera
Address: 2200 6th AVE.
City: Seattle State: WA Zip: 98121
Phone: 206-787-8210 Fax: —
Client Project # 16-06310-011

Project Manager: George Iftner
Project Name: prairie pit
Location: Frederickson City, State: WA
Collector: G. Iftner Date of Collection: see below
Email: giftner@herreraine.com

| Sample Number | Date ~~Depth~~ | Time | Sample Type | Container Type | VOC 8260 Halogenated | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | cPAH 8270 + Naphth | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | Oxygenates VOC a MTCA | Metals (Cd, Cr, Pb, Ni, Zn) | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 TP-J-0 | 7/22/19 | 10:15 | Soil | 2 VOAs, 1 Jar | X | X | | | | X | | | | | | | X | | 7-29-19 |
| 2 TP-L-0 | 7/23/19 | 15:30 | | | | | | | | ⊗ | | | ⊗ | | | | ⊗ | | Added per |
| 3 Ditch-5-0 | | 13:50 | | | | | | | | | | | | | | | | | George via |
| 4 Ditch-6-0 | | 15:10 | | | | | | | | ⊗ | | | | | | | ⊗ | | email. 48 hr |
| 5 EXC-E-SP2 | | 10:20 | | | | | | | | | | | | | | | | | |
| 6 EXC-E1-4 | | 10:30 | | | | | | | | ⊗ | | | ⊗ | | | | ⊗ | | |
| 7 EXC-E2-0 | | 10:35 | | | | | | | | | | | | | | | | | |
| 8 EXC-F1-0 | | 14:00 | | | | | | | | ⊗ | | | ⊗ | | | | ⊗ | | |
| 9 EXC-F2-0 | | 14:10 | | | | | | | | | | | | | | | | | |
| 10 EXC-G1-1 | 7/24/19 | 12:10 | | | | | | | | ⊗ | | | | | | | ⊗ | | |
| 11 EXC-G2-1 | | 12:20 | | | | | | | | | | | | | | | | | |
| 12 EXC-G3-2.5 | | 12:30 | | | | | | | | ⊗ | | | | | | | ⊗ | | |
| 13 EXC-G6-2.5 | | 13:00 | | | | | | | | | | | | | | | | | |
| 14 EXC-G4-1 | 7/25/19 | 09:40 | | | | | | | | ⊗ | | | | | | | ⊗ | | |
| 15 EXC-G5-1 | | 10:10 | | | | | | | | ⊗ | | | | | | | ⊗ | | |
| 16 EXC-G7-1 | | 09:50 | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| George Iftner | 7/25 14:33 | | 7/25/19 1712 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

ML

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com


PRAIRIE PIT PROJECT
Herrera Environmental
Frederickson, Washington
Libby Project # L190725-40
Client Project # 16-063-10-011

**Volatile Organic Compounds including Oxygenates by EPA Method 8260C in Soil**

| Sample Description | | Method Blank | TP-J-0 | TP-L-0 | Ditch-5-0 | Ditch-6-0 | Exc-E-SP2 |
|---|---|---|---|---|---|---|---|
| Date Sampled | Reporting | N/A | 7/22/19 | 7/23/19 | 7/23/19 | 7/23/19 | 7/23/19 |
| Date Analyzed | Limits | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 |
| | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| Dichlorodifluoromethane | 0.06 | nd | nd | nd | nd | nd | nd |
| Chloromethane | 0.06 | nd | nd | nd | nd | nd | nd |
| Vinyl chloride | 0.02 | nd | nd | nd | nd | nd | nd |
| Bromomethane | 0.09 | nd | nd | nd | nd | nd | nd |
| Chloroethane | 0.06 | nd | nd | nd | nd | nd | nd |
| Trichlorofluoromethane | 0.05 | nd | nd | nd | nd | nd | nd |
| 1,1-Dichloroethene | 0.05 | nd | nd | nd | nd | nd | nd |
| Methylene chloride | 0.02 | nd | nd | nd | nd | nd | nd |
| Methyl *tert*- Butyl Ether (MTBE) | 0.05 | nd | nd | nd | nd | nd | nd |
| *trans* -1,2-Dichloroethene | 0.02 | nd | nd | nd | nd | nd | nd |
| *tert*- Butanol (TBA) | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,1-Dichloroethane | 0.03 | nd | nd | nd | nd | nd | nd |
| Ethyl-*tert*- Butal Ether (ETBE) | 0.10 | nd | nd | nd | nd | nd | nd |
| 2,2-Dichloropropane | 0.05 | nd | nd | nd | nd | nd | nd |
| *cis* -1,2-Dichloroethene | 0.02 | nd | nd | nd | nd | nd | nd |
| Chloroform | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,1,1-Trichloroethane (TCA) | 0.02 | nd | nd | nd | nd | nd | nd |
| Carbon tetrachloride | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,1-Dichloropropene | 0.02 | nd | nd | nd | nd | nd | nd |
| tert-Amyl Methyl Ether (TAME) | 0.02 | nd | nd | nd | nd | nd | nd |
| Benzene | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,2-Dichloroethane (EDC) | 0.03 | nd | nd | nd | nd | nd | nd |
| Trichloroethene (TCE) | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,2-Dichloropropane | 0.02 | nd | nd | nd | nd | nd | nd |
| Dibromomethane | 0.04 | nd | nd | nd | nd | nd | nd |
| Bromodichloromethane | 0.02 | nd | nd | nd | nd | nd | nd |
| cis-1,3-Dichloropropene | 0.02 | nd | nd | nd | nd | nd | nd |
| Toluene | 0.10 | nd | nd | nd | nd | nd | nd |
| Trans-1,3-Dichloropropene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,1,2-Trichloroethane | 0.03 | nd | nd | nd | nd | nd | nd |
| Tetrachloroethene (PCE) | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,3-Dichloropropane | 0.05 | nd | nd | nd | nd | nd | nd |
| Dibromochloromethane | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,2-Dibromoethane (EDB) * | 0.005 | nd | nd | nd | nd | nd | nd |
| Chlorobenzene | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,1,1,2-Tetrachloroethane | 0.03 | nd | nd | nd | nd | nd | nd |
| Ethylbenzene | 0.05 | nd | nd | nd | nd | nd | nd |
| Total Xylenes | 0.15 | nd | nd | nd | nd | nd | nd |
| Styrene | 0.02 | nd | nd | nd | nd | nd | nd |

# Libby Environmental, Inc.

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Herrera Environmental
Frederickson, Washington
Libby Project # L190725-40
Client Project # 16-063-10-011

**Volatile Organic Compounds including Oxygenates by EPA Method 8260C in Soil**

| Sample Description | | Method Blank | TP-J-0 | TP-L-0 | Ditch-5-0 | Ditch-6-0 | Exc-E-SP2 |
|---|---|---|---|---|---|---|---|
| Date Sampled | Reporting | N/A | 7/22/19 | 7/23/19 | 7/23/19 | 7/23/19 | 7/23/19 |
| Date Analyzed | Limits | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 |
| | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| Bromoform | 0.03 | nd | nd | nd | nd | nd | nd |
| Isopropylbenzene | 0.05 | nd | nd | nd | nd | nd | nd |
| 1,2,3-Trichloropropane | 0.05 | nd | nd | nd | nd | nd | nd |
| Bromobenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,1,2,2-Tetrachloroethane | 0.03 | nd | nd | nd | nd | nd | nd |
| n-Propylbenzene | 0.04 | nd | nd | nd | nd | nd | nd |
| 2-Chlorotoluene | 0.03 | nd | nd | nd | nd | nd | nd |
| 4-Chlorotoluene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,3,5-Trimethylbenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| tert-Butylbenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,2,4-Trimethylbenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| sec-Butylbenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,3-Dichlorobenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| Isopropyltoluene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,4-Dichlorobenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,2-Dichlorobenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| n-Butylbenzene | 0.05 | nd | nd | nd | nd | nd | nd |
| 1,2-Dibromo-3-Chloropropane | 0.05 | nd | nd | nd | nd | nd | nd |
| 1,2,4-Trichlorolbenzene | 0.05 | nd | nd | nd | nd | nd | nd |
| Hexachloro-1,3-butadiene | 0.10 | nd | nd | nd | nd | nd | nd |
| Naphthalenes | 0.10 | nd | nd | nd | nd | nd | nd |
| 1,2,3-Trichlorobenzene | 0.10 | nd | nd | nd | nd | nd | nd |
| Surrogate Recovery | | | | | | | |
| Dibromofluoromethane | | 115 | 118 | 101 | 106 | 101 | 101 |
| 1,2-Dichloroethane-d4 | | 117 | 123 | 103 | 125 | 120 | 122 |
| Toluene-d8 | | 82 | 113 | 86 | 91 | 86 | 112 |
| 4-Bromofluorobenzene | | 70 | 66 | 68 | 83 | 74 | 98 |

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com


PRAIRIE PIT PROJECT
Herrera Environmental
Frederickson, Washington
Libby Project # L190725-40
Client Project # 16-063-10-011

**Volatile Organic Compounds including Oxygenates by EPA Method 8260C in Soil**

| Sample Description | | Exc-E-SP2 Dup | Exc-E1-4 | Exc-E2-0 | Exc-F1-0 | Exc-F2-0 | Exc-G1-1 |
|---|---|---|---|---|---|---|---|
| Date Sampled | Reporting | 7/23/19 | 7/23/19 | 7/23/19 | 7/23/19 | 7/23/19 | 7/24/19 |
| Date Analyzed | Limits | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 |
| | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| Dichlorodifluoromethane | 0.06 | nd | nd | nd | nd | nd | nd |
| Chloromethane | 0.06 | nd | nd | nd | nd | nd | nd |
| Vinyl chloride | 0.02 | nd | nd | nd | nd | nd | nd |
| Bromomethane | 0.09 | nd | nd | nd | nd | nd | nd |
| Chloroethane | 0.06 | nd | nd | nd | nd | nd | nd |
| Trichlorofluoromethane | 0.05 | nd | nd | nd | nd | nd | nd |
| 1,1-Dichloroethene | 0.05 | nd | nd | nd | nd | nd | nd |
| Methylene chloride | 0.02 | nd | nd | nd | nd | nd | nd |
| Methyl *tert*- Butyl Ether (MTBE) | 0.05 | nd | nd | nd | nd | nd | nd |
| *trans* -1,2-Dichloroethene | 0.02 | nd | nd | nd | nd | nd | nd |
| *tert*- Butanol (TBA) | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,1-Dichloroethane | 0.03 | nd | nd | nd | nd | nd | nd |
| Ethyl-*tert*- Butal Ether (ETBE) | 0.10 | nd | nd | nd | nd | nd | nd |
| 2,2-Dichloropropane | 0.05 | nd | nd | nd | nd | nd | nd |
| *cis* -1,2-Dichloroethene | 0.02 | nd | nd | nd | nd | nd | nd |
| Chloroform | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,1,1-Trichloroethane (TCA) | 0.02 | nd | nd | nd | nd | nd | nd |
| Carbon tetrachloride | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,1-Dichloropropene | 0.02 | nd | nd | nd | nd | nd | nd |
| tert-Amyl Methyl Ether (TAME) | 0.02 | nd | nd | nd | nd | nd | nd |
| Benzene | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,2-Dichloroethane (EDC) | 0.03 | nd | nd | nd | nd | nd | nd |
| Trichloroethene (TCE) | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,2-Dichloropropane | 0.02 | nd | nd | nd | nd | nd | nd |
| Dibromomethane | 0.04 | nd | nd | nd | nd | nd | nd |
| Bromodichloromethane | 0.02 | nd | nd | nd | nd | nd | nd |
| cis-1,3-Dichloropropene | 0.02 | nd | nd | nd | nd | nd | nd |
| Toluene | 0.10 | nd | nd | nd | nd | nd | nd |
| Trans-1,3-Dichloropropene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,1,2-Trichloroethane | 0.03 | nd | nd | nd | nd | nd | nd |
| Tetrachloroethene (PCE) | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,3-Dichloropropane | 0.05 | nd | nd | nd | nd | nd | nd |
| Dibromochloromethane | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,2-Dibromoethane (EDB) * | 0.005 | nd | nd | nd | nd | nd | nd |
| Chlorobenzene | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,1,1,2-Tetrachloroethane | 0.03 | nd | nd | nd | nd | nd | nd |
| Ethylbenzene | 0.05 | nd | nd | nd | nd | nd | nd |
| Total Xylenes | 0.15 | nd | nd | nd | nd | nd | nd |
| Styrene | 0.02 | nd | nd | nd | nd | nd | nd |

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3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
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Herrera Environmental
Frederickson, Washington
Libby Project # L190725-40
Client Project # 16-063-10-011

**Volatile Organic Compounds including Oxygenates by EPA Method 8260C in Soil**

| Sample Description | | Exc-E-SP2 Dup | Exc-E1-4 | Exc-E2-0 | Exc-F1-0 | Exc-F2-0 | Exc-G1-1 |
|---|---|---|---|---|---|---|---|
| Date Sampled | Reporting | 7/23/19 | 7/23/19 | 7/23/19 | 7/23/19 | 7/23/19 | 7/24/19 |
| Date Analyzed | Limits | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 |
| | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| Bromoform | 0.03 | nd | nd | nd | nd | nd | nd |
| Isopropylbenzene | 0.05 | nd | nd | nd | nd | nd | nd |
| 1,2,3-Trichloropropane | 0.05 | nd | nd | nd | nd | nd | nd |
| Bromobenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,1,2,2-Tetrachloroethane | 0.03 | nd | nd | nd | nd | nd | nd |
| n-Propylbenzene | 0.04 | nd | nd | nd | nd | nd | nd |
| 2-Chlorotoluene | 0.03 | nd | nd | nd | nd | nd | nd |
| 4-Chlorotoluene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,3,5-Trimethylbenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| tert-Butylbenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,2,4-Trimethylbenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| sec-Butylbenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,3-Dichlorobenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| Isopropyltoluene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,4-Dichlorobenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,2-Dichlorobenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| n-Butylbenzene | 0.05 | nd | nd | nd | nd | nd | nd |
| 1,2-Dibromo-3-Chloropropane | 0.05 | nd | nd | nd | nd | nd | nd |
| 1,2,4-Trichlorolbenzene | 0.05 | nd | nd | nd | nd | nd | nd |
| Hexachloro-1,3-butadiene | 0.10 | nd | nd | nd | nd | nd | nd |
| Naphthalenes | 0.10 | nd | nd | nd | nd | nd | nd |
| 1,2,3-Trichlorobenzene | 0.10 | nd | nd | nd | nd | nd | nd |
| Surrogate Recovery | | | | | | | |
| Dibromofluoromethane | | 96 | 106 | 102 | 87 | 89 | 88 |
| 1,2-Dichloroethane-d4 | | 113 | 118 | 111 | 116 | 116 | 115 |
| Toluene-d8 | | 88 | 90 | 99 | 90 | 99 | 103 |
| 4-Bromofluorobenzene | | 77 | 78 | 67 | 68 | 69 | 72 |

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

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3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com


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Herrera Environmental
Frederickson, Washington
Libby Project # L190725-40
Client Project # 16-063-10-011

**Volatile Organic Compounds including Oxygenates by EPA Method 8260C in Soil**

| Sample Description | | Exc-G2-1 | Exc-G3-2.5 | Exc-G6-2.5 | Exc-G6-2.5 Dup | Exc-G4-1 | Exc-G5-1 |
|---|---|---|---|---|---|---|---|
| Date Sampled | Reporting | 7/24/19 | 7/24/19 | 7/24/19 | 7/24/19 | 7/25/19 | 7/25/19 |
| Date Analyzed | Limits | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 |
| | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| Dichlorodifluoromethane | 0.06 | nd | nd | nd | nd | nd | nd |
| Chloromethane | 0.06 | nd | nd | nd | nd | nd | nd |
| Vinyl chloride | 0.02 | nd | nd | nd | nd | nd | nd |
| Bromomethane | 0.09 | nd | nd | nd | nd | nd | nd |
| Chloroethane | 0.06 | nd | nd | nd | nd | nd | nd |
| Trichlorofluoromethane | 0.05 | nd | nd | nd | nd | nd | nd |
| 1,1-Dichloroethene | 0.05 | nd | nd | nd | nd | nd | nd |
| Methylene chloride | 0.02 | nd | nd | nd | nd | nd | nd |
| Methyl *tert*- Butyl Ether (MTBE) | 0.05 | nd | nd | nd | nd | nd | nd |
| *trans* -1,2-Dichloroethene | 0.02 | nd | nd | nd | nd | nd | nd |
| *tert*- Butanol (TBA) | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,1-Dichloroethane | 0.03 | nd | nd | nd | nd | nd | nd |
| Ethyl-*tert*- Butal Ether (ETBE) | 0.10 | nd | nd | nd | nd | nd | nd |
| 2,2-Dichloropropane | 0.05 | nd | nd | nd | nd | nd | nd |
| *cis* -1,2-Dichloroethene | 0.02 | nd | nd | nd | nd | nd | nd |
| Chloroform | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,1,1-Trichloroethane (TCA) | 0.02 | nd | nd | nd | nd | nd | nd |
| Carbon tetrachloride | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,1-Dichloropropene | 0.02 | nd | nd | nd | nd | nd | nd |
| tert-Amyl Methyl Ether (TAME) | 0.02 | nd | nd | nd | nd | nd | nd |
| Benzene | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,2-Dichloroethane (EDC) | 0.03 | nd | nd | nd | nd | nd | nd |
| Trichloroethene (TCE) | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,2-Dichloropropane | 0.02 | nd | nd | nd | nd | nd | nd |
| Dibromomethane | 0.04 | nd | nd | nd | nd | nd | nd |
| Bromodichloromethane | 0.02 | nd | nd | nd | nd | nd | nd |
| cis-1,3-Dichloropropene | 0.02 | nd | nd | nd | nd | nd | nd |
| Toluene | 0.10 | nd | nd | nd | nd | nd | nd |
| Trans-1,3-Dichloropropene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,1,2-Trichloroethane | 0.03 | nd | nd | nd | nd | nd | nd |
| Tetrachloroethene (PCE) | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,3-Dichloropropane | 0.05 | nd | nd | nd | nd | nd | nd |
| Dibromochloromethane | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,2-Dibromoethane (EDB) * | 0.005 | nd | nd | nd | nd | nd | nd |
| Chlorobenzene | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,1,1,2-Tetrachloroethane | 0.03 | nd | nd | nd | nd | nd | nd |
| Ethylbenzene | 0.05 | nd | nd | nd | nd | nd | nd |
| Total Xylenes | 0.15 | nd | nd | nd | nd | nd | nd |
| Styrene | 0.02 | nd | nd | nd | nd | nd | nd |

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3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com


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Herrera Environmental
Frederickson, Washington
Libby Project # L190725-40
Client Project # 16-063-10-011

**Volatile Organic Compounds including Oxygenates by EPA Method 8260C in Soil**

| Sample Description | | Exc-G2-1 | Exc-G3-2.5 | Exc-G6-2.5 | Exc-G6-2.5 Dup | Exc-G4-1 | Exc-G5-1 |
|---|---|---|---|---|---|---|---|
| Date Sampled | Reporting | 7/24/19 | 7/24/19 | 7/24/19 | 7/24/19 | 7/25/19 | 7/25/19 |
| Date Analyzed | Limits | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 | 7/25/19 |
| | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| Bromoform | 0.03 | nd | nd | nd | nd | nd | nd |
| Isopropylbenzene | 0.05 | nd | nd | nd | nd | nd | nd |
| 1,2,3-Trichloropropane | 0.05 | nd | nd | nd | nd | nd | nd |
| Bromobenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,1,2,2-Tetrachloroethane | 0.03 | nd | nd | nd | nd | nd | nd |
| n-Propylbenzene | 0.04 | nd | nd | nd | nd | nd | nd |
| 2-Chlorotoluene | 0.03 | nd | nd | nd | nd | nd | nd |
| 4-Chlorotoluene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,3,5-Trimethylbenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| tert-Butylbenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,2,4-Trimethylbenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| sec-Butylbenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,3-Dichlorobenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| Isopropyltoluene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,4-Dichlorobenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,2-Dichlorobenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| n-Butylbenzene | 0.05 | nd | nd | nd | nd | nd | nd |
| 1,2-Dibromo-3-Chloropropane | 0.05 | nd | nd | nd | nd | nd | nd |
| 1,2,4-Trichlorolbenzene | 0.05 | nd | nd | nd | nd | nd | nd |
| Hexachloro-1,3-butadiene | 0.10 | nd | nd | nd | nd | nd | nd |
| Naphthalenes | 0.10 | nd | nd | nd | nd | nd | nd |
| 1,2,3-Trichlorobenzene | 0.10 | nd | nd | nd | nd | nd | nd |
| Surrogate Recovery | | | | | | | |
| Dibromofluoromethane | | 96 | 106 | 102 | 87 | 89 | 88 |
| 1,2-Dichloroethane-d4 | | 113 | 118 | 111 | 116 | 116 | 115 |
| Toluene-d8 | | 88 | 90 | 99 | 90 | 99 | 103 |
| 4-Bromofluorobenzene | | 77 | 78 | 67 | 68 | 69 | 72 |

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
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Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
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Libby Project # L190725-40
Client Project # 16-063-10-011

**Volatile Organic Compounds including Oxygenates by EPA Method 8260C in Soil**

| Sample Description | | Exc-G7-1 |
|---|---|---|
| Date Sampled<br>Date Analyzed | Reporting Limits (mg/kg) | 7/25/19<br>7/25/19<br>(mg/kg) |
| Dichlorodifluoromethane | 0.06 | nd |
| Chloromethane | 0.06 | nd |
| Vinyl chloride | 0.02 | nd |
| Bromomethane | 0.09 | nd |
| Chloroethane | 0.06 | nd |
| Trichlorofluoromethane | 0.05 | nd |
| 1,1-Dichloroethene | 0.05 | nd |
| Methylene chloride | 0.02 | nd |
| Methyl *tert*- Butyl Ether (MTBE) | 0.05 | nd |
| *trans* -1,2-Dichloroethene | 0.02 | nd |
| *tert*- Butanol (TBA) | 0.02 | nd |
| 1,1-Dichloroethane | 0.03 | nd |
| Ethyl-*tert*- Butal Ether (ETBE) | 0.10 | nd |
| 2,2-Dichloropropane | 0.05 | nd |
| *cis* -1,2-Dichloroethene | 0.02 | nd |
| Chloroform | 0.02 | nd |
| 1,1,1-Trichloroethane (TCA) | 0.02 | nd |
| Carbon tetrachloride | 0.03 | nd |
| 1,1-Dichloropropene | 0.02 | nd |
| tert-Amyl Methyl Ether (TAME) | 0.02 | nd |
| Benzene | 0.02 | nd |
| 1,2-Dichloroethane (EDC) | 0.03 | nd |
| Trichloroethene (TCE) | 0.02 | nd |
| 1,2-Dichloropropane | 0.02 | nd |
| Dibromomethane | 0.04 | nd |
| Bromodichloromethane | 0.02 | nd |
| cis-1,3-Dichloropropene | 0.02 | nd |
| Toluene | 0.10 | nd |
| Trans-1,3-Dichloropropene | 0.03 | nd |
| 1,1,2-Trichloroethane | 0.03 | nd |
| Tetrachloroethene (PCE) | 0.02 | nd |
| 1,3-Dichloropropane | 0.05 | nd |
| Dibromochloromethane | 0.03 | nd |
| 1,2-Dibromoethane (EDB) * | 0.005 | nd |
| Chlorobenzene | 0.02 | nd |
| 1,1,1,2-Tetrachloroethane | 0.03 | nd |
| Ethylbenzene | 0.05 | nd |
| Total Xylenes | 0.15 | nd |
| Styrene | 0.02 | nd |

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Client Project # 16-063-10-011

**Volatile Organic Compounds including Oxygenates by EPA Method 8260C in Soil**

| Sample Description | | Exc-G7-1 |
|---|---|---|
| Date Sampled | Reporting | 7/25/19 |
| Date Analyzed | Limits | 7/25/19 |
| | (mg/kg) | (mg/kg) |
| Bromoform | 0.03 | nd |
| Isopropylbenzene | 0.05 | nd |
| 1,2,3-Trichloropropane | 0.05 | nd |
| Bromobenzene | 0.03 | nd |
| 1,1,2,2-Tetrachloroethane | 0.03 | nd |
| n-Propylbenzene | 0.04 | nd |
| 2-Chlorotoluene | 0.03 | nd |
| 4-Chlorotoluene | 0.03 | nd |
| 1,3,5-Trimethylbenzene | 0.03 | nd |
| tert-Butylbenzene | 0.03 | nd |
| 1,2,4-Trimethylbenzene | 0.03 | nd |
| sec-Butylbenzene | 0.03 | nd |
| 1,3-Dichlorobenzene | 0.03 | nd |
| Isopropyltoluene | 0.03 | nd |
| 1,4-Dichlorobenzene | 0.03 | nd |
| 1,2-Dichlorobenzene | 0.03 | nd |
| n-Butylbenzene | 0.05 | nd |
| 1,2-Dibromo-3-Chloropropane | 0.05 | nd |
| 1,2,4-Trichlorolbenzene | 0.05 | nd |
| Hexachloro-1,3-butadiene | 0.10 | nd |
| Naphthalenes | 0.10 | nd |
| 1,2,3-Trichlorobenzene | 0.10 | nd |

| Surrogate Recovery | |
|---|---|
| Dibromofluoromethane | 89 |
| 1,2-Dichloroethane-d4 | 122 |
| Toluene-d8 | 93 |
| 4-Bromofluorobenzene | 68 |

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

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Client Project # 16-063-10-011

**QA/QC Data - EPA 8260C Analyses**

| | Sample Identification: Exc-G1-1 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Matrix Spike | | | Matrix Spike Duplicate | | | RPD |
| | Spiked Conc. (mg/kg) | Measured Conc. (mg/kg) | Spike Recovery (%) | Spiked Conc. (mg/kg) | Measured Conc. (mg/kg) | Spike Recovery (%) | |
| 1,1-Dichloroethene | 0.50 | 0.35 | 70 | 0.50 | 0.34 | 68 | 2.9 |
| Benzene | 0.50 | 0.50 | 100 | 0.50 | 0.54 | 108 | 7.7 |
| Toluene | 0.50 | 0.52 | 104 | 0.50 | 0.60 | 120 | 14.3 |
| Chlorobenzene | 0.50 | 0.55 | 110 | 0.50 | 0.59 | 118 | 7.0 |
| Trichloroethene (TCE) | 0.50 | 0.43 | 86 | 0.50 | 0.51 | 102 | 17.0 |
| Surrogate Recovery | | | | | | | |
| Dibromofluoromethane | | | 106 | | | 108 | |
| 1,2-Dichloroethane-d4 | | | 130 | | | 133 | |
| Toluene-d8 | | | 110 | | | 112 | |
| 4-Bromofluorobenzene | | | 70 | | | 66 | |

| | Laboratory Control Sample | | |
|---|---|---|---|
| | Spiked Conc. (mg/kg) | Measured Conc. (mg/kg) | Spike Recovery (%) |
| 1,1-Dichloroethene | 0.50 | 0.40 | 80 |
| Benzene | 0.50 | 0.49 | 98 |
| Toluene | 0.50 | 0.42 | 84 |
| Chlorobenzene | 0.50 | 0.59 | 118 |
| Trichloroethene (TCE) | 0.50 | 0.42 | 84 |
| Surrogate Recovery | | | |
| Dibromofluoromethane | | | 116 |
| 1,2-Dichloroethane-d4 | | | 111 |
| Toluene-d8 | | | 85 |
| 4-Bromofluorobenzene | | | 68 |

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 65%-135%
ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Paul Burke

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

PRAIRIE PIT PROJECT
Herrera Environmental
Frederickson, Washington
Libby Project # L190725-40
Client Project # 16-063-10-011

## Analyses of Gasoline (NWTPH-Gx) in Soil

| Sample Number | Date Analyzed | Surrogate Recovery (%) | Gasoline (mg/kg) |
|---|---|---|---|
| Method Blank | 7/25/19 | 82% | nd |
| TP-J-0 | 7/25/19 | 113% | nd |
| TP-L-0 | 7/25/19 | 86% | nd |
| Ditch-5-0 | 7/25/19 | 91% | nd |
| Ditch-6-0 | 7/25/19 | 86% | nd |
| Exc-E-SP2 | 7/25/19 | 112% | nd |
| Exc-E-SP2 Dup | 7/25/19 | 88% | nd |
| Exc-E1-4 | 7/25/19 | 90% | nd |
| Exc-E2-0 | 7/25/19 | 99% | nd |
| Exc-F1-0 | 7/25/19 | 90% | nd |
| Exc-F2-0 | 7/25/19 | 99% | nd |
| Exc-G1-1 | 7/25/19 | 103% | nd |
| Exc-G2-1 | 7/25/19 | 88% | nd |
| Exc-G3-2.5 | 7/25/19 | 90% | nd |
| Exc-G6-2.5 | 7/25/19 | 99% | nd |
| Exc-G6-2.5 Dup | 7/25/19 | 90% | nd |
| Exc-G4-1 | 7/25/19 | 99% | nd |
| Exc-G5-1 | 7/25/19 | 103% | nd |
| Exc-G7-1 | 7/25/19 | 93% | nd |
| Practical Quantitation Limit | | | 10 |

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

PRAIRIE PIT PROJECT
Herrera Environmental
Frederickson, Washington
Libby Project # L190725-40
Client Project # 16-063-10-011

**Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil**

| Sample Number | Date Analyzed | Surrogate Recovery (%) | Diesel (mg/kg) | Oil (mg/kg) |
|---|---|---|---|---|
| Method Blank | 7/25/19 | 87 | nd | nd |
| TP-J-0 | 7/25/19 | 83 | nd | nd |
| TP-L-0 | 7/25/19 | 69 | nd | nd |
| Ditch-5-0 | 7/25/19 | 89 | nd | 504 |
| Ditch-6-0 | 7/25/19 | 80 | nd | nd |
| Exc-E-SP2 | 7/25/19 | 90 | nd | 1060 |
| Exc-E-SP2 Dup | 7/25/19 | 87 | nd | 1050 |
| Exc-E1-4 | 7/25/19 | 86 | nd | 253 |
| Exc-E2-0 | 7/25/19 | 75 | nd | 3100 |
| Exc-F1-0 | 7/25/19 | 81 | nd | 439 |
| Exc-F2-0 | 7/25/19 | 93 | nd | 1090 |
| Exc-G1-1 | 7/25/19 | 85 | nd | nd |
| Exc-G2-1 | 7/25/19 | 81 | nd | 1360 |
| Exc-G3-2.5 | 7/25/19 | 92 | nd | nd |
| Exc-G6-2.5 | 7/25/19 | 104 | nd | 4090 |
| Exc-G4-1 | 7/25/19 | 90 | nd | nd |
| Exc-G5-1 | 7/25/19 | 97 | nd | nd |
| Exc-G5-1 Dup | 7/25/19 | 91 | nd | nd |
| Exc-G7-1 | 7/25/19 | 99 | nd | 726 |
| Practical Quantitation Limit | | | 50 | 250 |

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

PRAIRIE PIT PROJECT
Herrera Environmental
Frederickson, Washington
Libby Project # L190725-40
Client Project # 16-063-10-011

**Analyses of PCB (Polychlorinated Biphenyls) in Soil by EPA Method 8082**

| Sample Description | PQL | Method Blank | LCS | TP-L-0 | Exc-E1-4 | Exc-F1-0 | L190726-40 MS |
|---|---|---|---|---|---|---|---|
| Date Sampled | | N/A | N/A | 7/23/19 | 7/23/19 | 7/23/19 | 7/24/19 |
| Date Analyzed | | 7/31/19 | 7/31/19 | 7/31/19 | 7/31/19 | 7/31/19 | 7/31/19 |
| | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| Aroclor 1016 | 0.1 | nd | 102% | nd | nd | nd | 99% |
| Aroclor 1221 | 0.1 | nd | | nd | nd | nd | |
| Aroclor 1232 | 0.1 | nd | | nd | nd | nd | |
| Aroclor 1242 | 0.1 | nd | | nd | nd | nd | |
| Aroclor 1248 | 0.1 | nd | | nd | nd | nd | |
| Aroclor 1254 | 0.1 | nd | | nd | nd | nd | |
| Aroclor 1260 | 0.1 | nd | 95% | nd | nd | nd | 106% |
| Surrogate Recovery | | | | | | | |
| TCMX | | 104 | 102 | 94 | 99 | 85 | 102 |
| DCBP | | 97 | 100 | 100 | 101 | 98 | 105 |

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%
ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Paul Burke

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

PRAIRIE PIT PROJECT
Herrera Environmental
Frederickson, Washington
Libby Project # L190725-40
Client Project # 16-063-10-011

**Analyses of Total Metals in Soil by EPA Method 7010 Series**

| Sample Number | Date Analyzed | Lead (mg/kg) | Cadmium (mg/kg) | Chromium (mg/kg) | Zinc (mg/kg) |
|---|---|---|---|---|---|
| Method Blank | 7/30/19 | nd | nd | nd | nd |
| TP-L-0 | 7/30/19 | nd | nd | nd | nd |
| Ditch-6-0 | 7/30/19 | 29 | nd | nd | nd |
| EXC-E1-4 | 7/30/19 | 90 | nd | nd | nd |
| EXC-F1-0 | 7/30/19 | 133 | nd | 6.6 | nd |
| EXC-G1-1 | 7/30/19 | 22 | nd | nd | 6.4 |
| EXC-G3-2.5 | 7/30/19 | nd | nd | nd | 5.9 |
| EXC-G4-1 | 7/30/19 | 13 | nd | 8.6 | 6.0 |
| EXC-G5-1 | 7/30/19 | 149 | nd | nd | 7.0 |
| Practical Quantitation Limit | | 5.0 | 1.0 | 5.0 | 5.0 |

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Dirk Peterson

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

PRAIRIE PIT PROJECT
Herrera Environmental
Frederickson, Washington
Libby Project # L190725-40
Client Project # 16-063-10-011

## QA/QC for Total Metals in Soil by EPA Method 7010 Series

| Sample Number | Date Analyzed | Lead (% Recovery) | Cadmium (% Recovery) | Chromium (% Recovery) | Zinc (% Recovery) |
|---|---|---|---|---|---|
| LCS | 7/30/19 | 102% | 108% | 105% | 93% |
| L190726-40 MS | 7/30/19 | 90% | 85% | 85% | 87% |
| L190726-40 MSD | 7/30/19 | 94% | 86% | 85% | 91% |
| RPD | 7/30/19 | 4% | 1% | 0% | 4% |

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Dirk Peterson

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

**Libby Environmental**
Sherry Chilcutt
3322 South Bay Road NE
Olympia, WA 98506

**RE: Prairie Pit**
**Work Order Number: 1907372**

August 02, 2019

**Attention Sherry Chilcutt:**

Fremont Analytical, Inc. received 18 sample(s) on 7/29/2019 for the analyses presented in the following report.

***Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)***
***Sample Moisture (Percent Moisture)***

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

**Date:** *08/02/2019*

**CLIENT:** Libby Environmental
**Project:** Prairie Pit
**Work Order:** 1907372

# Work Order Sample Summary

| Lab Sample ID | Client Sample ID | Date/Time Collected | Date/Time Received |
|---|---|---|---|
| 1907372-001 | TP-L-0 | 07/23/2019 10:15 AM | 07/29/2019 2:52 PM |
| 1907372-002 | Ditch-6-0 | 07/23/2019 3:10 PM | 07/29/2019 2:52 PM |
| 1907372-003 | EXC-E1-4 | 07/23/2019 10:30 AM | 07/29/2019 2:52 PM |
| 1907372-004 | EXC-F1-0 | 07/23/2019 2:00 PM | 07/29/2019 2:52 PM |
| 1907372-005 | EXC-G1-1 | 07/24/2019 12:10 PM | 07/29/2019 2:52 PM |
| 1907372-006 | EXC-G3-2.5 | 07/24/2019 12:30 PM | 07/29/2019 2:52 PM |
| 1907372-007 | EXC-G4-1 | 07/25/2019 9:40 AM | 07/29/2019 2:52 PM |
| 1907372-008 | EXC-G5-1 | 07/25/2019 10:10 AM | 07/29/2019 2:52 PM |
| 1907372-009 | EXC-G7-B-1 | 07/26/2019 8:30 AM | 07/29/2019 2:52 PM |
| 1907372-010 | EXC-H2-1 | 07/26/2019 11:00 AM | 07/29/2019 2:52 PM |
| 1907372-011 | EXC-H3-1 | 07/26/2019 11:30 AM | 07/29/2019 2:52 PM |
| 1907372-012 | EXC-H5c-5 | 07/26/2019 12:00 AM | 07/29/2019 2:52 PM |
| 1907372-013 | EXC-H1B-1.5 | 07/26/2019 3:20 PM | 07/29/2019 2:52 PM |
| 1907372-014 | EXC-H7-8 | 07/26/2019 2:20 PM | 07/29/2019 2:52 PM |
| 1907372-015 | EXC-H6-6 | 07/26/2019 2:50 PM | 07/29/2019 2:52 PM |
| 1907372-016 | Ditch-5B-1 | 07/26/2019 3:45 PM | 07/29/2019 2:52 PM |
| 1907372-017 | EXC-F2B-1.5 | 07/26/2019 3:55 PM | 07/29/2019 2:52 PM |
| 1907372-018 | EXC-H4-1 | 07/26/2019 2:00 PM | 07/29/2019 2:52 PM |



Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

# Case Narrative

WO#: **1907372**

Date: **8/2/2019**

**CLIENT:** Libby Environmental
**Project:** Prairie Pit

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.

8/2/19: Revision 1 includes a revised sample ID.

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 (<20%RSD, <20% Drift or minimum RRF)
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
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/23/2019 10:15:00 AM
**Project:** Prairie Pit
**Lab ID:** 1907372-001
**Matrix:** Soil
**Client Sample ID:** **TP-L-0**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| 2-Methylnaphthalene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| 1-Methylnaphthalene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| Benz(a)anthracene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| Chrysene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| Benzo(b)fluoranthene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| Benzo(k)fluoranthene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| Benzo(a)pyrene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| Indeno(1,2,3-cd)pyrene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| Dibenz(a,h)anthracene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| Surr: 2-Fluorobiphenyl | 62.5 | 19.4 - 157 | | %Rec | 1 | 7/30/2019 11:10:23 PM |
| Surr: Terphenyl-d14 (surr) | 60.2 | 31.5 - 173 | | %Rec | 1 | 7/30/2019 11:10:23 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 22.0 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/23/2019 3:10:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-002
**Matrix:** Soil
**Client Sample ID:** **Ditch-6-0**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| 2-Methylnaphthalene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| 1-Methylnaphthalene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| Benz(a)anthracene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| Chrysene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| Benzo(b)fluoranthene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| Benzo(k)fluoranthene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| Benzo(a)pyrene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| Indeno(1,2,3-cd)pyrene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| Dibenz(a,h)anthracene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| Surr: 2-Fluorobiphenyl | 78.2 | 19.4 - 157 | | %Rec | 1 | 7/30/2019 11:51:42 PM |
| Surr: Terphenyl-d14 (surr) | 102 | 31.5 - 173 | | %Rec | 1 | 7/30/2019 11:51:42 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 7.31 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/23/2019 10:30:00 AM
**Project:** Prairie Pit
**Lab ID:** 1907372-003
**Matrix:** Soil
**Client Sample ID:** **EXC-E1-4**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| 2-Methylnaphthalene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| 1-Methylnaphthalene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| Benz(a)anthracene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| Chrysene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| Benzo(b)fluoranthene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| Benzo(k)fluoranthene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| Benzo(a)pyrene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| Indeno(1,2,3-cd)pyrene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| Dibenz(a,h)anthracene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| Surr: 2-Fluorobiphenyl | 65.8 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 12:12:20 AM |
| Surr: Terphenyl-d14 (surr) | 72.7 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 12:12:20 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 13.4 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/23/2019 2:00:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-004
**Matrix:** Soil
**Client Sample ID:** **EXC-F1-0**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| 2-Methylnaphthalene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| 1-Methylnaphthalene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| Benz(a)anthracene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| Chrysene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| Benzo(b)fluoranthene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| Benzo(k)fluoranthene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| Benzo(a)pyrene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| Indeno(1,2,3-cd)pyrene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| Dibenz(a,h)anthracene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| Surr: 2-Fluorobiphenyl | 83.9 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 12:33:01 AM |
| Surr: Terphenyl-d14 (surr) | 100 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 12:33:01 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 7.80 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/24/2019 12:10:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-005
**Matrix:** Soil
**Client Sample ID:** **EXC-G1-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| 2-Methylnaphthalene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| 1-Methylnaphthalene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| Benz(a)anthracene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| Chrysene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| Benzo(b)fluoranthene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| Benzo(k)fluoranthene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| Benzo(a)pyrene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| Indeno(1,2,3-cd)pyrene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| Dibenz(a,h)anthracene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| Surr: 2-Fluorobiphenyl | 73.9 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 12:53:38 AM |
| Surr: Terphenyl-d14 (surr) | 96.1 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 12:53:38 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 4.38 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/24/2019 12:30:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-006
**Matrix:** Soil
**Client Sample ID:** **EXC-G3-2.5**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| 2-Methylnaphthalene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| 1-Methylnaphthalene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| Benz(a)anthracene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| Chrysene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| Benzo(b)fluoranthene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| Benzo(k)fluoranthene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| Benzo(a)pyrene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| Indeno(1,2,3-cd)pyrene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| Dibenz(a,h)anthracene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| Surr: 2-Fluorobiphenyl | 75.7 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 1:14:14 AM |
| Surr: Terphenyl-d14 (surr) | 74.4 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 1:14:14 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 8.58 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/25/2019 9:40:00 AM
**Project:** Prairie Pit
**Lab ID:** 1907372-007
**Matrix:** Soil
**Client Sample ID:** **EXC-G4-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| 2-Methylnaphthalene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| 1-Methylnaphthalene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| Benz(a)anthracene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| Chrysene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| Benzo(b)fluoranthene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| Benzo(k)fluoranthene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| Benzo(a)pyrene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| Indeno(1,2,3-cd)pyrene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| Dibenz(a,h)anthracene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| Surr: 2-Fluorobiphenyl | 68.4 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 1:34:53 AM |
| Surr: Terphenyl-d14 (surr) | 67.1 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 1:34:53 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 11.2 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/25/2019 10:10:00 AM
**Project:** Prairie Pit
**Lab ID:** 1907372-008
**Matrix:** Soil
**Client Sample ID:** **EXC-G5-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| 2-Methylnaphthalene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| 1-Methylnaphthalene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| Benz(a)anthracene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| Chrysene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| Benzo(b)fluoranthene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| Benzo(k)fluoranthene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| Benzo(a)pyrene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| Indeno(1,2,3-cd)pyrene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| Dibenz(a,h)anthracene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| Surr: 2-Fluorobiphenyl | 73.5 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 1:55:28 AM |
| Surr: Terphenyl-d14 (surr) | 72.0 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 1:55:28 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 4.10 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 8:30:00 AM
**Project:** Prairie Pit
**Lab ID:** 1907372-009
**Matrix:** Soil
**Client Sample ID:** **EXC-G7-B-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| 2-Methylnaphthalene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| 1-Methylnaphthalene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| Benz(a)anthracene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| Chrysene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| Benzo(b)fluoranthene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| Benzo(k)fluoranthene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| Benzo(a)pyrene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| Indeno(1,2,3-cd)pyrene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| Dibenz(a,h)anthracene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| Surr: 2-Fluorobiphenyl | 73.7 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 2:16:03 AM |
| Surr: Terphenyl-d14 (surr) | 83.9 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 2:16:03 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 3.35 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 11:00:00 AM
**Project:** Prairie Pit
**Lab ID:** 1907372-010
**Matrix:** Soil
**Client Sample ID:** **EXC-H2-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| 2-Methylnaphthalene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| 1-Methylnaphthalene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| Benz(a)anthracene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| Chrysene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| Benzo(b)fluoranthene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| Benzo(k)fluoranthene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| Benzo(a)pyrene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| Indeno(1,2,3-cd)pyrene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| Dibenz(a,h)anthracene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| Surr: 2-Fluorobiphenyl | 67.6 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 2:36:44 AM |
| Surr: Terphenyl-d14 (surr) | 77.5 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 2:36:44 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 8.13 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 11:30:00 AM
**Project:** Prairie Pit
**Lab ID:** 1907372-011
**Matrix:** Soil
**Client Sample ID:** **EXC-H3-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| 2-Methylnaphthalene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| 1-Methylnaphthalene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| Benz(a)anthracene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| Chrysene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| Benzo(b)fluoranthene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| Benzo(k)fluoranthene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| Benzo(a)pyrene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| Indeno(1,2,3-cd)pyrene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| Dibenz(a,h)anthracene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| Surr: 2-Fluorobiphenyl | 83.4 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 3:38:29 AM |
| Surr: Terphenyl-d14 (surr) | 103 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 3:38:29 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 4.42 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019
**Project:** Prairie Pit
**Lab ID:** 1907372-012
**Matrix:** Soil
**Client Sample ID:** **EXC-H5c-5**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| 2-Methylnaphthalene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| 1-Methylnaphthalene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| Benz(a)anthracene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| Chrysene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| Benzo(b)fluoranthene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| Benzo(k)fluoranthene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| Benzo(a)pyrene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| Indeno(1,2,3-cd)pyrene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| Dibenz(a,h)anthracene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| Surr: 2-Fluorobiphenyl | 95.0 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 3:59:02 AM |
| Surr: Terphenyl-d14 (surr) | 105 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 3:59:02 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 4.07 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 3:20:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-013
**Matrix:** Soil
**Client Sample ID:** **EXC-H1B-1.5**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| 2-Methylnaphthalene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| 1-Methylnaphthalene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| Benz(a)anthracene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| Chrysene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| Benzo(b)fluoranthene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| Benzo(k)fluoranthene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| Benzo(a)pyrene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| Indeno(1,2,3-cd)pyrene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| Dibenz(a,h)anthracene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| Surr: 2-Fluorobiphenyl | 93.2 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 4:19:34 AM |
| Surr: Terphenyl-d14 (surr) | 95.0 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 4:19:34 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 6.64 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 2:20:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-014
**Matrix:** Soil
**Client Sample ID:** **EXC-H7-8**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| 2-Methylnaphthalene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| 1-Methylnaphthalene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| Benz(a)anthracene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| Chrysene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| Benzo(b)fluoranthene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| Benzo(k)fluoranthene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| Benzo(a)pyrene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| Indeno(1,2,3-cd)pyrene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| Dibenz(a,h)anthracene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| Surr: 2-Fluorobiphenyl | 80.6 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 4:40:12 AM |
| Surr: Terphenyl-d14 (surr) | 97.2 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 4:40:12 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 8.06 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 2:50:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-015
**Matrix:** Soil
**Client Sample ID:** **EXC-H6-6**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| 2-Methylnaphthalene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| 1-Methylnaphthalene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| Benz(a)anthracene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| Chrysene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| Benzo(b)fluoranthene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| Benzo(k)fluoranthene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| Benzo(a)pyrene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| Indeno(1,2,3-cd)pyrene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| Dibenz(a,h)anthracene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| Surr: 2-Fluorobiphenyl | 77.0 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 5:00:43 AM |
| Surr: Terphenyl-d14 (surr) | 91.1 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 5:00:43 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 13.7 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 3:45:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-016
**Matrix:** Soil
**Client Sample ID:** **Ditch-5B-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| 2-Methylnaphthalene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| 1-Methylnaphthalene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| Benz(a)anthracene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| Chrysene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| Benzo(b)fluoranthene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| Benzo(k)fluoranthene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| Benzo(a)pyrene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| Indeno(1,2,3-cd)pyrene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| Dibenz(a,h)anthracene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| Surr: 2-Fluorobiphenyl | 91.0 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 5:21:16 AM |
| Surr: Terphenyl-d14 (surr) | 102 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 5:21:16 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 1.43 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 3:55:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-017
**Matrix:** Soil
**Client Sample ID:** **EXC-F2B-1.5**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| 2-Methylnaphthalene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| 1-Methylnaphthalene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| Benz(a)anthracene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| Chrysene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| Benzo(b)fluoranthene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| Benzo(k)fluoranthene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| Benzo(a)pyrene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| Indeno(1,2,3-cd)pyrene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| Dibenz(a,h)anthracene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| Surr: 2-Fluorobiphenyl | 63.2 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 5:41:54 AM |
| Surr: Terphenyl-d14 (surr) | 60.6 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 5:41:54 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 12.2 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 2:00:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-018
**Matrix:** Soil
**Client Sample ID:** **EXC-H4-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| 2-Methylnaphthalene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| 1-Methylnaphthalene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| Benz(a)anthracene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| Chrysene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| Benzo(b)fluoranthene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| Benzo(k)fluoranthene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| Benzo(a)pyrene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| Indeno(1,2,3-cd)pyrene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| Dibenz(a,h)anthracene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| Surr: 2-Fluorobiphenyl | 86.0 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 6:02:28 AM |
| Surr: Terphenyl-d14 (surr) | 93.6 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 6:02:28 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 4.50 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

**Work Order:** 1907372
**CLIENT:** Libby Environmental
**Project:** Prairie Pit

# QC SUMMARY REPORT

## Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **MB-25341** SampType: **MBLK** Units: **µg/Kg** Prep Date: **7/30/2019** RunNo: **52974**
Client ID: **MBLKS** Batch ID: **25341** Analysis Date: **7/30/2019** SeqNo: **1046577**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | ND | 40.0 | | | | | | | | | |
| 2-Methylnaphthalene | ND | 40.0 | | | | | | | | | |
| 1-Methylnaphthalene | ND | 40.0 | | | | | | | | | |
| Benz(a)anthracene | ND | 40.0 | | | | | | | | | |
| Chrysene | ND | 40.0 | | | | | | | | | |
| Benzo(b)fluoranthene | ND | 40.0 | | | | | | | | | |
| Benzo(k)fluoranthene | ND | 40.0 | | | | | | | | | |
| Benzo(a)pyrene | ND | 40.0 | | | | | | | | | |
| Indeno(1,2,3-cd)pyrene | ND | 40.0 | | | | | | | | | |
| Dibenz(a,h)anthracene | ND | 40.0 | | | | | | | | | |
| Surr: 2-Fluorobiphenyl | 291 | | 500.0 | | 58.1 | 19.4 | 157 | | | | |
| Surr: Terphenyl-d14 (surr) | 395 | | 500.0 | | 78.9 | 31.5 | 173 | | | | |

Sample ID: **LCS-25341** SampType: **LCS** Units: **µg/Kg** Prep Date: **7/30/2019** RunNo: **52974**
Client ID: **LCSS** Batch ID: **25341** Analysis Date: **7/30/2019** SeqNo: **1046579**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | 939 | 40.0 | 1,000 | 0 | 93.9 | 52.9 | 134 | | | | |
| 2-Methylnaphthalene | 1,050 | 40.0 | 1,000 | 0 | 105 | 45.1 | 135 | | | | |
| 1-Methylnaphthalene | 1,030 | 40.0 | 1,000 | 0 | 103 | 55.7 | 141 | | | | |
| Benz(a)anthracene | 905 | 40.0 | 1,000 | 0 | 90.5 | 36.6 | 142 | | | | |
| Chrysene | 967 | 40.0 | 1,000 | 0 | 96.7 | 43 | 165 | | | | |
| Benzo(b)fluoranthene | 882 | 40.0 | 1,000 | 0 | 88.2 | 41 | 155 | | | | |
| Benzo(k)fluoranthene | 1,020 | 40.0 | 1,000 | 0 | 102 | 30.6 | 164 | | | | |
| Benzo(a)pyrene | 998 | 40.0 | 1,000 | 0 | 99.8 | 30.2 | 171 | | | | |
| Indeno(1,2,3-cd)pyrene | 913 | 40.0 | 1,000 | 0 | 91.3 | 31.3 | 159 | | | | |
| Dibenz(a,h)anthracene | 910 | 40.0 | 1,000 | 0 | 91.0 | 28 | 158 | | | | |
| Surr: 2-Fluorobiphenyl | 439 | | 500.0 | | 87.9 | 19.4 | 157 | | | | |
| Surr: Terphenyl-d14 (surr) | 476 | | 500.0 | | 95.1 | 31.5 | 173 | | | | |

**Work Order:** 1907372
**CLIENT:** Libby Environmental
**Project:** Prairie Pit

# QC SUMMARY REPORT

## Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **1907372-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **7/30/2019** RunNo: **52974**
Client ID: **TP-L-0** Batch ID: **25341** Analysis Date: **7/30/2019** SeqNo: **1046581**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | ND | 50.3 | | | | | | 0 | | 30 | |
| 2-Methylnaphthalene | ND | 50.3 | | | | | | 0 | | 30 | |
| 1-Methylnaphthalene | ND | 50.3 | | | | | | 0 | | 30 | |
| Benz(a)anthracene | ND | 50.3 | | | | | | 0 | | 30 | |
| Chrysene | ND | 50.3 | | | | | | 0 | | 30 | |
| Benzo(b)fluoranthene | ND | 50.3 | | | | | | 0 | | 30 | |
| Benzo(k)fluoranthene | ND | 50.3 | | | | | | 0 | | 30 | |
| Benzo(a)pyrene | ND | 50.3 | | | | | | 0 | | 30 | |
| Indeno(1,2,3-cd)pyrene | ND | 50.3 | | | | | | 0 | | 30 | |
| Dibenz(a,h)anthracene | ND | 50.3 | | | | | | 0 | | 30 | |
| Surr: 2-Fluorobiphenyl | 483 | | 628.9 | | 76.8 | 19.4 | 157 | | 0 | | |
| Surr: Terphenyl-d14 (surr) | 422 | | 628.9 | | 67.1 | 31.5 | 173 | | 0 | | |

Sample ID: **1907372-010AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **7/30/2019** RunNo: **52974**
Client ID: **EXC-H2-1** Batch ID: **25341** Analysis Date: **7/31/2019** SeqNo: **1046591**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | 743 | 38.5 | 961.6 | 0 | 77.3 | 38.9 | 124 | | | | |
| 2-Methylnaphthalene | 721 | 38.5 | 961.6 | 0 | 74.9 | 42.8 | 151 | | | | |
| 1-Methylnaphthalene | 734 | 38.5 | 961.6 | 0 | 76.4 | 38.4 | 125 | | | | |
| Benz(a)anthracene | 997 | 38.5 | 961.6 | 6.389 | 103 | 34.9 | 139 | | | | |
| Chrysene | 756 | 38.5 | 961.6 | 0 | 78.7 | 45.2 | 146 | | | | |
| Benzo(b)fluoranthene | 873 | 38.5 | 961.6 | 0 | 90.8 | 42.2 | 168 | | | | |
| Benzo(k)fluoranthene | 717 | 38.5 | 961.6 | 0 | 74.5 | 20.5 | 150 | | | | |
| Benzo(a)pyrene | 872 | 38.5 | 961.6 | 0 | 90.7 | 34.4 | 179 | | | | |
| Indeno(1,2,3-cd)pyrene | 698 | 38.5 | 961.6 | 0 | 72.6 | 11.8 | 140 | | | | |
| Dibenz(a,h)anthracene | 689 | 38.5 | 961.6 | 0 | 71.6 | 17.3 | 156 | | | | |
| Surr: 2-Fluorobiphenyl | 390 | | 480.8 | | 81.1 | 19.4 | 157 | | | | |
| Surr: Terphenyl-d14 (surr) | 464 | | 480.8 | | 96.4 | 31.5 | 173 | | | | |

**Work Order:** 1907372
**CLIENT:** Libby Environmental
**Project:** Prairie Pit

# QC SUMMARY REPORT

## Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **1907372-010AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **7/30/2019** RunNo: **52974**
Client ID: **EXC-H2-1** Batch ID: **25341** Analysis Date: **7/31/2019** SeqNo: **1046592**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | 976 | 40.2 | 1,006 | 0 | 97.0 | 38.9 | 124 | 743.2 | 27.1 | 30 | |
| 2-Methylnaphthalene | 1,030 | 40.2 | 1,006 | 0 | 103 | 42.8 | 151 | 720.6 | 35.5 | 30 | R |
| 1-Methylnaphthalene | 979 | 40.2 | 1,006 | 0 | 97.3 | 38.4 | 125 | 734.3 | 28.5 | 30 | |
| Benz(a)anthracene | 1,120 | 40.2 | 1,006 | 6.389 | 111 | 34.9 | 139 | 996.6 | 11.7 | 30 | |
| Chrysene | 1,020 | 40.2 | 1,006 | 0 | 101 | 45.2 | 146 | 756.4 | 29.2 | 30 | |
| Benzo(b)fluoranthene | 971 | 40.2 | 1,006 | 0 | 96.5 | 42.2 | 168 | 872.8 | 10.6 | 30 | |
| Benzo(k)fluoranthene | 1,130 | 40.2 | 1,006 | 0 | 112 | 20.5 | 150 | 716.8 | 44.4 | 30 | R |
| Benzo(a)pyrene | 1,140 | 40.2 | 1,006 | 0 | 113 | 34.4 | 179 | 871.9 | 26.8 | 30 | |
| Indeno(1,2,3-cd)pyrene | 1,000 | 40.2 | 1,006 | 0 | 99.6 | 11.8 | 140 | 698.4 | 35.7 | 30 | R |
| Dibenz(a,h)anthracene | 980 | 40.2 | 1,006 | 0 | 97.4 | 17.3 | 156 | 688.5 | 34.9 | 30 | R |
| Surr: 2-Fluorobiphenyl | 501 | | 503.0 | | 99.7 | 19.4 | 157 | | 0 | | |
| Surr: Terphenyl-d14 (surr) | 534 | | 503.0 | | 106 | 31.5 | 173 | | 0 | | |

**NOTES:**
R - High RPD observed, spike recovery is within range.

**Work Order:** 1907372
**CLIENT:** Libby Environmental
**Project:** Prairie Pit

# QC SUMMARY REPORT

## Sample Moisture (Percent Moisture)

Sample ID: **1907372-004ADUP** SampType: **DUP** Units: **wt%** Prep Date: **7/29/2019** RunNo: **52935**
Client ID: **EXC-F1-0** Batch ID: **R52935** Analysis Date: **7/29/2019** SeqNo: **1045928**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 7.09 | 0.500 | | | | | | 7.799 | 9.58 | 20 | |

Sample ID: **1907372-016ADUP** SampType: **DUP** Units: **wt%** Prep Date: **7/29/2019** RunNo: **52935**
Client ID: **Ditch-5B-1** Batch ID: **R52935** Analysis Date: **7/29/2019** SeqNo: **1045941**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 1.39 | 0.500 | | | | | | 1.432 | 2.79 | 20 | |

# Sample Log-In Check List

| | | | |
|---|---|---|---|
| Client Name: | **LIBBY** | Work Order Number: | **1907372** |
| Logged by: | **Clare Griggs** | Date Received: | **7/29/2019 2:52:00 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 Required ☑ |
| 6. | Was an attempt made to cool the samples? | Yes ☑ | No ☐ | NA ☐ |
| 7. | Were all items received at a temperature of >0°C to 10.0°C * | Yes ☐ | No ☑ | NA ☐ |
| | | **Refer to item information.** | | |
| 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 ☐ |
| 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: | Kodey Eley | Date: | 7/30/2019 |
| By Whom: | Clare Griggs | Via: | ☑ eMail ☐ Phone ☐ Fax ☐ In Person |
| Regarding: | Confirming sample names / COC. | | |
| Client Instructions: | | | |

19. Additional remarks:

**Item Information**

| Item # | Temp °C |
|---|---|
| Cooler | 6.4 |
| Sample | 22.0 |

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

## Chain of Custody Record

1907372

www.LibbyEnvironmental.com

Date: 7/29/19 Page: 1 of 2

Project Manager: Sherry Chilcutt

Client: Libby Environmental, Inc

Address: See above

Project Name: Prairie Pit

City: State: Zip:

Location: City, State: WA

Phone: Fax:

Collector: Date of Collection: 7/23-7/26

Client Project #

Email: LibbyEnv@Gmail.com



| | Sample Number | Date ~~Depth~~ | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270 + Naphthalene | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | | | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TP-L-0 | 7-23-19 | 1015 | Soil | 4oz Jar | | | | | | | X | | | | | | | | |
| 2 | Ditch-6-0 | " | 1510 | " | " | | | | | | | X | | | | | | | | |
| 3 | EXC-E1-4 | " | 1035 | " | " | | | | | | | X | | | | | | | | |
| 4 | ~~EXC~~-F1-0 | " | 1400 | " | " | | | | | | | X | | | | | | | | |
| 5 | EXC-G1-1 | 7-24-19 | 1210 | " | " | | | | | | | X | | | | | | | | |
| 6 | EXC-G3-2.5 | " | 1230 | " | " | | | | | | | X | | | | | | | | |
| 7 | EXC-G4-1 | 7-25-19 | 0940 | " | " | | | | | | | X | | | | | | | | |
| 8 | EXC-G5-1 | " | 1010 | " | " | | | | | | | X | | | | | | | | |
| 9 | EXC-G7-B-1 | ~~7-26-19~~ | 0830 | " | " | | | | | | | X | | | | | | | | |
| 10 | EXC-H2-1 | " | 1106 | " | " | | | | | | | X | | | | | | | | |
| 11 | EXC-H3-1 | " | 1130 | " | " | | | | | | | X | | | | | | | | |
| 12 | EXC-H5C-5 | " | — | " | " | | | | | | | X | | | | | | | | |
| 13 | EXC-H7B-1.5 | " | 1520 | " | " | | | | | | | X | | | | | | | | |
| 14 | EXC-H7-8 | " | 1420 | " | " | | | | | | | X | | | | | | | | |
| 15 | EXC-H6-6 | " | 1450 | " | " | | | | | | | X | | | | | | | | |
| 16 | Ditch-5B-1 | " | 1545 | " | " | | | | | | | X | | | | | | | | |
| 17 | EXC-F2B-1.5 | " | 1555 | " | " | | | | | | | X | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| [signature] | 7-29-19 1452 | Kayla Peto | 7/29/19 1452 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

Distribution: White - Lab, Yellow - File, Pink - Originator

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

## Chain of Custody Record

1907372

www.LibbyEnvironmental.com

Date: 7-29-19 Page: 2 of 2

Project Manager: Sherry Chilcutt

Project Name: Prairie Pit

Location: City, State: WA

Collector: Date of Collection: 7-26-19

Email: Libbyenv@Gmail.com

Client: Libby Environmental, Inc

Address:

City: State: Zip:

Phone: Fax:

Client Project #



| Sample Number | Depth | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270+Naphthalene | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | | | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 EXC-H1-1 | — | 1400 | Soil | Jar | | | | | | | X | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| [signature] | 7-29-19 1452 | Kayla Pet | 7/29/19 1452 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR (48HR) 5-DAY

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

Distribution: White - Lab, Yellow - File, Pink - Originator

# Libby Environmental, Inc.

# Chain of Custody Record

1907372

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Page: 1 of 2

Client: Libby Environmental, Inc
Address: See above
City: State: Zip:
Phone: Fax:
Client Project #

Date: 7/29/19
Project Manager: Sherry Chilcott
Project Name: Prairie Pit
Location: City, State: WA
Collector: Date of Collection: 7/23-7/26
Email: LibbyEnv@gmail.com



| Sample Number | Date / ~~Depth~~ | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270 +Naph | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | | | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 TP-L-0 | 7-23-19 | 1015 | Soil | 4oz Jar | | | | | | X | X | | | | | | | | |
| 2 Ditch-6-0 | " | 1516 | " | " | | | | | | X | X | | | | | | | | |
| 3 EXC-E1-4 | " | 1035 | " | " | | | | | | X | X | | | | | | | | |
| 4 ~~EXC~~-F1-0 | " | 1400 | " | " | | | | | | X | X | | | | | | | | |
| 5 EXC-G1-1 | 7-24-19 | 1210 | " | " | | | | | | X | X | | | | | | | | |
| 6 EXC-G3-2.5 | " | 1230 | " | " | | | | | | X | X | | | | | | | | |
| 7 EXC-G4-1 | 7-25-19 | 0940 | " | " | | | | | | X | X | | | | | | | | |
| 8 EXC-G5-1 | " | 1010 | " | " | | | | | | X | X | | | | | | | | |
| 9 EXC-G7-B-1 | ~~7-26-19~~ | 0830 | " | " | | | | | | X | X | | | | | | | | |
| 10 EXC-H2-1 | " | 1106 | " | " | | | | | | X | X | | | | | | | | |
| 11 EXC-H3-1 | " | 1130 | " | " | | | | | | X | X | | | | | | | | |
| 12 EXC-H5C-5 | " | — | " | " | | | | | | X | X | | | | | | | | |
| 13 EXC-HB-1.5 | " | 1520 | " | " | | | | | | X | X | | | | | | | | |
| 14 EXC-47-8 | " | 1420 | " | " | | | | | | X | X | | | | | | | | |
| 15 EXC-H6-6 | " | 1450 | " | " | | | | | | X | X | | | | | | | | |
| 16 Ditch-5B-1 | " | 1545 | " | " | | | | | | X | X | | | | | | | | |
| 17 EXC-F2B-1.5 | " | 1555 | " | " | | | | | | X | X | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| [signature] | 7-29-19 1452 | Kayla Peter | 7/29/19 1452 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

## Chain of Custody Record

1907372

www.LibbyEnvironmental.com

Date: 7-29-19 Page: 2 of 2

Client: Libby Environmental, Inc
Address:
City: State: Zip:
Phone: Fax:
Client Project #

Project Manager: Sherry Chilcutt
Project Name: Prairie Pit
Location: City, State: WA
Collector: Date of Collection: 7-26-19
Email: Libbyenv@Gmail.com

| | Sample Number | Depth | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270+Naphthalene | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | | | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | EXC-~~HI~~-1 | — | 1400 | Soil | Jar | | | | | | | X | | | | | | | | edit per KE. 7/30/19 cej |
| 2 | H4 | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| [signature] | 7-29-19 1452 | Kayla Pet | 7/29/19 1452 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR (48HR) 5-DAY

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

Distribution: White - Lab, Yellow - File, Pink - Originator

# Libby Environmental, Inc.

# Chain of Custody Record

1907372

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 7/29/19 Page: 1 of 2

Client: Libby Environmental, Inc
Address: See above
City: State: Zip:
Phone: Fax:
Client Project #

Project Manager: Sherry Chilcutt
Project Name: Prairie Pit
Location: City, State: WA
Collector: Date of Collection: 7/23-7/26
Email: LibbyEnv@Gmail.com



| Sample Number | Date / Depth | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270 + Naphthalene | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 TP-L-0 | 7-23-19 | 1015 | Soil | 4oz Jar | | | | | | | X | | | | | | |
| 2 Ditch-6-0 | " | 1516 | " | " | | | | | | | X | | | | | | |
| 3 EXC-E1-4 | " | 1035 | " | " | | | | | | | X | | | | | | |
| 4 EXC-F1-0 | " | 1400 | " | " | | | | | | | X | | | | | | |
| 5 EXC-G1-1 | 7-24-19 | 1210 | " | " | | | | | | | X | | | | | | |
| 6 EXC-G3-2.5 | " | 1230 | " | " | | | | | | | X | | | | | | |
| 7 EXC-G4-1 | 7-25-19 | 0940 | " | " | | | | | | | X | | | | | | |
| 8 EXC-G5-1 | " | 1010 | " | " | | | | | | | X | | | | | | |
| 9 EXC-H7-B-1 | ~~7-26-19~~ | 0830 | " | " | | | | | | | X | | | | | | |
| 10 EXC-H2-1 | " | 1106 | " | " | | | | | | | X | | | | | | |
| 11 EXC-H3-1 | " | 1130 | " | " | | | | | | | X | | | | | | |
| 12 EXC-H5C-5 | " | — | " | " | | | | | | | X | | | | | | |
| 13 EXC-HTB-1.5 | " | 1520 | " | " | | | | | | | X | | | | | | |
| 14 EXC-~~H7~~-8 | " | 1420 | " | " | | | | | | | X | | | | | | Sample ID: EXC-H7-8 |
| 15 EXC-H6-6 | " | 1450 | " | " | | | | | | | X | | | | | | |
| 16 Ditch-5B-1 | " | 1545 | " | " | | | | | | | X | | | | | | |
| 17 EXC-F2B-1.5 | " | 1555 | " | " | | | | | | | X | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| [signature] | 7-29-19 1452 | Kayla Peto | 7/29/19 1452 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks: edits per EB 8/2/19 pmm

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

## Chain of Custody Record

1907372

www.LibbyEnvironmental.com

Date: 7-29-19 Page: 2 of 2

Project Manager: Sherry Chilcutt

Project Name: Prairie Pit

Location: City, State: WA

Collector: Date of Collection: 7-26-19

Email: Libbyenv@Gmail.com

Client: Libby Environmental, Inc

Address:

City: State: Zip:

Phone: Fax:

Client Project #

| | Sample Number | Depth | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270+Naphths | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | | | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | EXC-~~H1~~-1 H4 | — | 1400 | Soil | Jar | | | | | | | X | | | | | | | | edit per KE 7/30/19 cej |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| [signature] | 7-29-19 1452 | Kayla Pet | 7/29/19 1452 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR (48HR) 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

**SPECTRA Laboratories** ...Where experience matters

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

08/01/2019

Libby Environmental, Inc.
3322 South Bay Road NE
Olympia, WA 98506

Project: Prairie Pit
Date Received: 07/29/2019
Spectra Project: 2019070878
Rush

| Client ID | Spectra # | Analyte | Result | Units | Method | Matrix | Date Sampled |
|---|---|---|---|---|---|---|---|
| TP-L-0 | 1 | Total Nickel | 2.4 | mg/Kg | SW846 6010D | Soil | 07/23/2019 |
| Ditch-6-0 | 2 | Total Nickel | 8.4 | mg/Kg | SW846 6010D | Soil | 07/23/2019 |
| Exc-E1-4 | 3 | Total Nickel | 6.5 | mg/Kg | SW846 6010D | Soil | 07/23/2019 |
| Exc-F1-0 | 4 | Total Nickel | 6.4 | mg/Kg | SW846 6010D | Soil | 07/23/2019 |
| Exc-G1-1 | 5 | Total Nickel | 11.1 | mg/Kg | SW846 6010D | Soil | 07/24/2019 |
| Exc-G3-2.5 | 6 | Total Nickel | 10.6 | mg/Kg | SW846 6010D | Soil | 07/24/2019 |
| Exc-G4-1 | 7 | Total Nickel | 2.1 | mg/Kg | SW846 6010D | Soil | 07/25/2019 |
| Exc-G5-1 | 8 | Total Nickel | 15.8 | mg/Kg | SW846 6010D | Soil | 07/25/2019 |
| Exc-G7-B1 | 9 | Total Nickel | 14.4 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |
| Exc-H2-1 | 10 | Total Nickel | 8.8 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |
| Exc-H3-1 | 11 | Total Nickel | 9.7 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |
| Exc-H5C-5 | 12 | Total Nickel | 10.6 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |
| Exc-H1B-1.5 | 13 | Total Nickel | 14.4 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |
| Exc-H7-8 | 14 | Total Nickel | 10.7 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

a8/jac

**SPECTRA Laboratories** ...Where experience matters

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

08/01/2019

Libby Environmental, Inc.
3322 South Bay Road NE
Olympia, WA 98506

Project: Prairie Pit
Date Received: 07/29/2019
Spectra Project: 2019070878
Rush

| Client ID | Spectra # | Analyte | Result | Units | Method | Matrix | Date Sampled |
|---|---|---|---|---|---|---|---|
| Exc-H6-6 | 15 | Total Nickel | 13.7 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |
| Ditch-5B-1 | 16 | Total Nickel | 10.4 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |
| Exc-H4-1 | 17 | Total Nickel | 11.5 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |
| Exc-F2B-1.5 | 18 | Total Nickel | 4.1 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

a8/jac

**SPECTRA Laboratories** ...Where experience matters

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

7/31/2019

Libby Environmental
4139 Libby Rd. NE
Olympia, WA 98506

Units: mg/Kg
Spectra Project: 2019070878
Applies to Spectra #'s 1-18
Analyst: SCJ

## QUALITY CONTROL RESULTS

### ICP Metals SW846 6010D - Soil/Solid

#### Method Blank

Date Digested: 7/31/2019 Date Analyzed: 7/31/2019

| Element | Blank Result |
|---|---|
| Nickel | < 1.5 |

#### Laboratory Control Sample (LCS)

Date Digested: 7/31/2019 Date Analyzed: 7/31/2019

| Element | Spike Added | LCS Conc. | LCS %Rec |
|---|---|---|---|
| Nickel | 200.0 | 183.8 | 91.9 |

LCS Recovery limits 80-120%

#### Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Digested: 7/31/2019 Date Analyzed: 7/31/2019
Sample Spiked: 2019070896-1

| Element | Sample Conc. | Spike Conc. | MS Conc. | MS %Rec | MSD Conc | MSD %Rec | RPD |
|---|---|---|---|---|---|---|---|
| Nickel | 118.4 | 200.0 | 303.5 | 92.6 | 307.9 | 94.8 | 2.3 |

Comment:
Recovery Limits 75-125%
RPD Limit 20

SPECTRA LABORATORIES

Jeffrey Cooper
Laboratory Manager

# Libby Environmental, Inc. 729070878 Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 7/29/19 Page: 1 of 2

Client: Libby Environmental, Inc
Address: see above
City: State: Zip:
Phone: Fax:
Client Project #

Project Manager: Sherry Gilcott
Project Name: Prairie Pit
Location: City, State: WA
Collector: Date of Collection: 7/22/19 - 7/26/19
Email: Libbyenv@gmail.com

| Sample Number | Date / Depth | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270 | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | NJ Total | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 TP-L-0 | 7-23-19 | 1530 | Soil | Jar | | | | | | | | | | | | | | |
| 2 Ditch-6-0 | | 1510 | | | | | | | | | | | | | | | | |
| 3 EXC-H1-4 | | 1030 | | | | | | | | | | | | | | | | Jar is EL-4 |
| 4 EXC-F1-0 | | 1400 | | | | | | | | | | | | | | | | |
| 5 EXC-G1-0 | 7-24-19 | 1210 | | | | | | | | | | | | | | | | |
| 6 EXC-G3-2.5 | | 1230 | | | | | | | | | | | | | | | | |
| 7 EXC-G4-1 | 7-25-19 | 9:40 | | | | | | | | | | | | | | | | |
| 8 EXC-G5-1 | | 1010 | | | | | | | | | | | | | | | | |
| 9 EXC-G7-B1 | 7-26-19 | 830 | | | | | | | | | | | | | | | | |
| 10 EXC-H2-1 | | 1100 | | | | | | | | | | | | | | | | |
| 11 EXC-H3-1 | | 1130 | | | | | | | | | | | | | | | | |
| 12 EXC-H5-5 | | — | | | | | | | | | | | | | | | | |
| 13 EXC-H1B-1.5 | | 1520 | | | | | | | | | | | | | | | | |
| 14 EXC-H7-8 | | 1420 | | | | | | | | | | | | | | | | Jar is H7-8 |
| 15 EXC-H6-6 | | 1450 | | | | | | | | | | | | | | | | |
| 16 Ditch-5B-1 | | 1545 | | | | | | | | | | | | | | | | |
| 17 EXC-H1-1 | | 1400 | | | | | | | | | | | | | | | | Jar is H4-1 |

COPY

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| | 7/29/19 1639 | Spectra | 7-29-19 1639 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

# Libby Environmental, Inc. 2190708 78 Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Client: Libby Environmental, Inc
Address: see above
City: State: Zip:
Phone: Fax:
Client Project #

Date: 7/29/19 Page: 1 of 2
Project Manager: Sherry Chilcott
Project Name: Prairie Pit
Location: City, State: WA
Collector: Date of Collection: 7/22/19 - 7/26/19
Email: Libbyenv@gmail.com

| | Sample Number | Date / Depth | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270 | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | NJ TPH | | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TP-L-0 | 7-23-19 | 1530 | Soil | Jar | | | | | | | | | | | | X | | | |
| 2 | Ditch-6-0 | | 1510 | | | | | | | | | | | | | | | | | |
| 3 | EXC-E1-4 | | 1030 | | | | | | | | | | | | | | | | | |
| 4 | EXC-F1-0 | | 1400 | | | | | | | | | | | | | | | | | |
| 5 | EXC-G1-0 | 7-24-19 | 1210 | | | | | | | | | | | | | | | | | |
| 6 | EXC-G3-2.5 | | 1230 | | | | | | | | | | | | | | | | | |
| 7 | EXC-G4-1 | 7-25-19 | 9:40 | | | | | | | | | | | | | | | | | |
| 8 | EXC-G5-1 | | 1010 | | | | | | | | | | | | | | | | | |
| 9 | EXC-G7-B1 | 7-26-19 | 830 | | | | | | | | | | | | | | | | | |
| 10 | EXC-H2-1 | | 1100 | | | | | | | | | | | | | | | | | |
| 11 | EXC-H3-1 | | 1130 | | | | | | | | | | | | | | | | | |
| 12 | EXC-H5C-5 | | | | | | | | | | | | | | | | | | | |
| 13 | EXC-H1B-1.5 | | 1520 | | | | | | | | | | | | | | | | | |
| 14 | EXC-H7-8 | | 1420 | | | | | | | | | | | | | | | | | |
| 15 | EXC-H6-6 | | 1450 | | | | | | | | | | | | | | | | | |
| 16 | Ditch-5B-1 | | 1545 | | | | | | | | | | | | | | | | | |
| 17 | EXC-H1-1 | | 1400 | | | | | | | | | | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| | 7/29/19 1639 | Spectra | 7.29.19 1639 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

# Libby Environmental, Inc. 201907087S Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 7-29-19 Page: 2 of 2

Client: Libby Environmental, Inc
Address: See above
City: State: Zip:
Phone: Fax:
Client Project #

Project Manager: Sherry Chilcutt
Project Name: PointeFit
Location: City, State: WA
Collector: Date of Collection: 7/22/19 - 7/26/19
Email: Libbyenv@Gmail.com

| Sample Number | Date / Depth | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270 | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | Ni Total | | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 EXC-F2B-1.5 | ~~7-26~~ | 1555 | Soil | | | | | | | | | | | | | X | | | |
| 2 | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| [signature] | 7/29/19 1639 | [signature] Spectra | 7.29.19 1639 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR / 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.
3322 South Bay Road NE • Olympia, WA 98506-2957

August 19, 2019

George Iftner
Herrera Environmental
2200 6th Avenue, Suite 1100
Seattle, WA 98121

Dear Mr. Iftner:

Please find enclosed the analytical data report for the Prairie Pit Project located in Fredrickson, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
*Senior Chemist*
*Libby Environmental, Inc.*

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

# Chain of Custody Record

www.LibbyEnvironmental.com

Date: 7/25/19 Page: 1 of 1

Client: Herrera
Address: 2200 6th AVE.
City: Seattle State: WA Zip: 98121
Phone: 206-787-8210 Fax: —
Client Project # 16-06310-011

Project Manager: George Iftner
Project Name: prairie pit
Location: Frederickson City, State: WA
Collector: G. Iftner Date of Collection: see below
Email: giftner@herrerainc.com

| Sample Number | Date ~~Depth~~ | Time | Sample Type | Container Type | VOC 8260 Halogenated | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | cPAH 8270 + Naphth | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | Oxygenates VOC & MTCA Metals (Cd, Cr, Pb, Ni, Zn) TCLP Pb | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 TP-J-0 | 7/22/19 | 10:15 | Soil | 2 Voas / Jar | X | X | | | | X | | | | | | X | | 7-29-19 |
| 2 TP-L-0 | 7/23/19 | 15:30 | | | | | | | | | ⊗ | | ⊗ | | | | ⊗ | Added per |
| 3 Ditch-S-0 | | 13:50 | | | | | | | | | | | | | | | | George via |
| 4 Ditch-G-0 | | 15:10 | | | | | | | | | ⊗ | | | | | | ⊗ | email. 48 hr |
| 5 EXC-E-SP2 | | 10:20 | | | | | | | | | | | | | | | | |
| 6 EXC-E1-4 | | 10:30 | | | | | | | | | ⊗ | | ⊗ | | | | ⊗ | |
| 7 EXC-E2-0 | | 10:35 | | | | | | | | | | | | | | | | |
| 8 EXC-F1-0 | | 14:00 | | | | | | | | | ⊗ | | ⊗ | | | | ⊗ | X |
| 9 EXC-F2-0 | ↓ | 14:10 | | | | | | | | | | | | | | | | |
| 10 EXC-G1-1 | 7/24/19 | 12:10 | | | | | | | | | ⊗ | | | | | | ⊗ | |
| 11 EXC-G2-1 | | 12:20 | | | | | | | | | | | | | | | | |
| 12 EXC-G3-2.5 | | 12:30 | | | | | | | | | ⊗ | | | | | | ⊗ | |
| 13 EXC-G6-2.5 | ↓ | 13:00 | ↓ | ↓ | ↓ | ↓ | | | | ↓ | | | | | | ↓ | | |
| 14 EXC-G4-1 | 7/25/19 | 09:40 | | | | | | | | | ⊗ | | | | | | ⊗ | |
| 15 EXC-G5-1 | | 10:10 | | | | | | | | | ⊗ | | | | | | ⊗ | X ⊛ added by G. Iftner via email 8/14/19. 48HR TAT |
| 16 EXC-G7-1 | | 09:50 | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| George Iftner | 7/25 14:33 | | 7/25/19 1712 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | Y | N |
|---|---|---|
| Good Condition? | | |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks: ML

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

SPECTRA Laboratories ...Where experience matters
2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

08/16/2019

Libby Environmental, Inc.
3322 South Bay Road NE
Olympia, WA 98506

Project: Prairie Pit
Sample Matrix: Soil
Date Sampled: 07/23/2019
Date Received: 07/29/2019
Spectra Project: 2019070878
Rush

| Client ID | Spectra # | Analyte | Result | Units | Method |
|---|---|---|---|---|---|
| TP-L-0 | 1 | Total Nickel | 2.4 | mg/Kg | SW846 6010D |
| Ditch-6-0 | 2 | Total Nickel | 8.4 | mg/Kg | SW846 6010D |
| Exc-E1-4 | 3 | Total Nickel | 6.5 | mg/Kg | SW846 6010D |
| Exc-F1-0 | 4 | TCLP Lead | 0.258 | mg/L | EPA 1311/6010D |
| Exc-F1-0 | 4 | Total Nickel | 6.4 | mg/Kg | SW846 6010D |
| Exc-G1-1 | 5 | Total Nickel | 11.1 | mg/Kg | SW846 6010D |
| Exc-G3-2.5 | 6 | Total Nickel | 10.6 | mg/Kg | SW846 6010D |
| Exc-G4-1 | 7 | Total Nickel | 2.1 | mg/Kg | SW846 6010D |
| Exc-G5-1 | 8 | TCLP Lead | 0.901 | mg/L | EPA 1311/6010D |
| Exc-G5-1 | 8 | Total Nickel | 15.8 | mg/Kg | SW846 6010D |
| Exc-G7-B1 | 9 | Total Nickel | 14.4 | mg/Kg | SW846 6010D |
| Exc-H2-1 | 10 | Total Nickel | 8.8 | mg/Kg | SW846 6010D |
| Exc-H3-1 | 11 | Total Nickel | 9.7 | mg/Kg | SW846 6010D |
| Exc-H5C-5 | 12 | Total Nickel | 10.6 | mg/Kg | SW846 6010D |
| Exc-H1B-1.5 | 13 | Total Nickel | 14.4 | mg/Kg | SW846 6010D |
| Exc-H7-8 | 14 | Total Nickel | 10.7 | mg/Kg | SW846 6010D |
| Exc-H6-6 | 15 | Total Nickel | 13.7 | mg/Kg | SW846 6010D |
| Ditch-5B-1 | 16 | Total Nickel | 10.4 | mg/Kg | SW846 6010D |

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

ajc

**SPECTRA Laboratories** ...Where experience matters

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08/16/2019

Libby Environmental, Inc.
3322 South Bay Road NE
Olympia, WA 98506

Project: Prairie Pit
Sample Matrix: Soil
Date Sampled: 07/26/2019
Date Received: 07/29/2019
Spectra Project: 2019070878
Rush

| Client ID | Spectra # | Analyte | Result | Units | Method |
|---|---|---|---|---|---|
| Exc-H4-1 | 17 | Total Nickel | 11.5 | mg/Kg | SW846 6010D |
| Exc-F2B-1.5 | 18 | Total Nickel | 4.1 | mg/Kg | SW846 6010D |

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

//scj

**SPECTRA** Laboratories ...Where experience matters

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8/16/2019

Libby Environmental, Inc
3322 South Bay Rd, NE
Olympia, WA 98506

Units: mg/L
Spectra Project: 2019080878
Applies to Spectra #'s 4,8
Analyst: SCJ

## QUALITY CONTROL RESULTS

### ICP Metals EPA 1311/6010D - TCLP Extract

#### Method Blank

Date Digested: 8/16/2019 Date Analyzed: 8/16/2019

| Element | Result |
|---|---|
| Lead | < 0.025 |

#### Laboratory Control Sample (LCS)

Date Digested: 8/16/2019 Date Analyzed: 8/16/2019

| Element | Spike Added | LCS Conc. | LCS %Rec |
|---|---|---|---|
| Lead | 1.0 | 0.994 | 99.4 |

LCS Recovery limits 80-120%

#### Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Digested: 8/16/2019 Date Analyzed: 8/16/2019
Sample Spiked: 2019070767-1

| Element | Sample Conc. | Spike Conc. | MS Conc. | MS %Rec | MSD Conc | MSD %Rec | RPD |
|---|---|---|---|---|---|---|---|
| Lead | 0.000 | 1.0 | 0.933 | 93.3 | 0.930 | 93.0 | 0.3 |

Recovery Limits 75-125%
RPD Limit 20
Comment:

Spectra Laboratories

Jeffrey Cooper
Laboratory Manager

# Libby Environmental, Inc. 2019070878 Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Client: Libby Environmental, inc
Address: see above
City: State: Zip:
Phone: Fax:
Client Project #

Date: 7/29/19 Page: 1 of 2
Project Manager: Sherry Chilcott
Project Name: Prairie Pit
Location: City, State: WA
Collector: Date of Collection: 7/22/19-7/26/19
Email: Libbyenv@gmail.com

| | Sample Number | Date / Depth | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270 | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | N, Total | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TP-L-0 | 7-23-19 | 1530 | Soil | Jar | | | | | | | | | | | | | | |
| 2 | Ditch-6-0 | | 1510 | | | | | | | | | | | | | | | | |
| 3 | EXC-E1-4 | | 1030 | | | | | | | | | | | | | | | | |
| 4 | EXC-F1-0 | | 1400 | | | | | | | | | | | | | | | | |
| 5 | EXC-G1-0 | 7-24-19 | 1210 | | | | | | | | | | | | | | | | |
| 6 | EXC-G3-2.5 | | 1230 | | | | | | | | | | | | | | | | |
| 7 | EXC-G4-1 | 7-25-19 | 9:40 | | | | | | | | | | | | | | | | |
| 8 | EXC-G5-1 | | 1010 | | | | | | | | | | | | | | | | |
| 9 | EXC-G7-B1 | 7-26-19 | 830 | | | | | | | | | | | | | | | | |
| 10 | EXC-H2-1 | | 1100 | | | | | | | | | | | | | | | | |
| 11 | EXC-H3-1 | | 1130 | | | | | | | | | | | | | | | | |
| 12 | EXC-H5C-5 | | | | | | | | | | | | | | | | | | |
| 13 | EXC-H2B-1.5 | | 1520 | | | | | | | | | | | | | | | | |
| 14 | EXC-H7-8 | | 1420 | | | | | | | | | | | | | | | | |
| 15 | EXC-H6-6 | | 1458 | | | | | | | | | | | | | | | | |
| 16 | Ditch-5B-1 | | 1545 | | | | | | | | | | | | | | | | |
| 17 | EXC-H1-1 | | 1400 | | | | | | | | | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| | 7/29/19 1639 | Spectra | 7-29-19 1639 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

Distribution: White - Lab, Yellow - File, Pink - Originator

**Marie Holt** 2019070878

**From:** Marie Holt
**Sent:** Wednesday, August 14, 2019 4:03 PM
**To:** Libby Environmental
**Subject:** RE: Add-on Analysis - Prairie Pit

Hello Jonelle!

I will pull these samples and submit for the additional testing.

RUSH TCLP Pb w/48 HR TAT:

Sample ID #4 EXC-F1-0
Sample ID #8 EXC-G5-1

Lori Hamilton (for Marie Holt)

**From:** Libby Environmental [mailto:libbyenv@gmail.com]
**Sent:** Wednesday, August 14, 2019 2:59 PM
**To:** Marie Holt <MarieH@spectra-lab.com>
**Subject:** Add-on Analysis - Prairie Pit

Hi Marie,

Our client has requested additional analysis on two samples:

Project: Prairie Pit
Spectra Project #: 2019070878
Samples: EXC-F1-0, EXC-G5-1
Add-on Analysis Requested: TCLP PB
TAT: 48HR

Do you still have enough volume to run this analysis? Thanks!

Jonelle Orozco
Office Assistant

Libby Environmental, Inc.
3322 South Bay Road NE
Olympia, WA 98506
360-352-2110 Office
www.LibbyEnvironmental.com

Libby Environmental, Inc.
3322 South Bay Road NE • Olympia, WA 98506-2957

August 2, 2019

George Iftner
Herrera Environmental
2200 6th Avenue, Suite 1100
Seattle, WA 98121

Dear Mr. Iftner:

Please find enclosed the analytical data report for the Prairie Pit Project located in Fredrickson, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
*Senior Chemist*
*Libby Environmental, Inc.*

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

# Libby Environmental, Inc.

# Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506

Ph: 360-352-2110
Fax: 360-352-4154

Client: Herrera Environmental

Address:

City: State: Zip:

Phone: Fax:

Client Project # 16-063-10-011

Date: 7/26/19 Page: 1 of 1

Project Manager: George Ifflander

Project Name: Prairie Pit

Location: City, State: Fredrikson, Wa

Collector: GI Date of Collection: 7/26/19

Email:

| Sample Number | Depth | Time | Sample Type | Container Type | VOC 8260 MTCA, Oxygenate | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270+Naphth | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | Metals (Cd, Cr, Pb, Ni, Zn) | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 Exc-B7B-1 | | 0830 | Soil | Jar/VOA | X | X | | | | X | X | | | | | X | | Exc-G7B-1 |
| 2 Exc-H1-1 | | 0915 | | | X | X | | | | X | | | | | | | | |
| 3 Exc-H2-1 | | 1100 | | | X | X | | | | X | X | | | | | X | | 7-29-19 |
| 4 Exc-H3-1 | | 1130 | | | X | X | | | | X | X | | | | | X | | Added per |
| 5 Exc-H5A-5 | | 1230 | | | X | X | | | | | | | | | | | | George via email |
| 6 Exc-H5B-5 | | 1240 | | | X | X | | | | | | | | | | | | 48hr TAT |
| 7 Exc-H5C-5 | | | | | | | | | | X | X | | X | | | X | | |
| 8 Exc-H1B-1.5 | | 1520 | | | | | | | | X | X | | | | | X | | |
| 9 Exc-H7-8 | | 1420 | | | X | X | | | | X | X | | | | | X | | |
| 10 Exc-H6-6 | | 1410 | | | X | X | | | | X | X | | | | | X | | |
| 11 Ditch-5B-1 | | 1545 | | | | | | | | X | X | | | | | X | | |
| 12 Exc-H4-1 | | 1400 | | | X | X | | | | X | X | | | | | X | | |
| 13 Exc-F2B-1.5 | | 1555 | | | | | | | | X | X | | X | | | X | | |
| 14 | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| George Ifflander | 7/26/19 16:00 | Rodney Gley | 7/26/19 1605 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

Good Condition? (Y) N

Temp. °C

Seals Intact? (Y) N N/A

Total Number of Containers

Remarks:

ML

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a cout of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

PRAIRIE PIT PROJECT
Herrera Environmental
Frederickson, Washington
Libby Project # L190726-40
Client Project # 16-063-10-011

**Volatile Organic Compounds including Oxygenates by EPA Method 8260C in Soil**

| Sample Description | | Method Blank | Exc-G7B-1 | Exc-H1-1 | Exc-H2-1 | Exc-H2-1 Dup | Exc-H3-1 |
|---|---|---|---|---|---|---|---|
| Date Sampled | Reporting | N/A | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 |
| Date Analyzed | Limits | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 |
| | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| Dichlorodifluoromethane | 0.06 | nd | nd | nd | nd | nd | nd |
| Chloromethane | 0.06 | nd | nd | nd | nd | nd | nd |
| Vinyl chloride | 0.02 | nd | nd | nd | nd | nd | nd |
| Bromomethane | 0.09 | nd | nd | nd | nd | nd | nd |
| Chloroethane | 0.06 | nd | nd | nd | nd | nd | nd |
| Trichlorofluoromethane | 0.05 | nd | nd | nd | nd | nd | nd |
| 1,1-Dichloroethene | 0.05 | nd | nd | nd | nd | nd | nd |
| Methylene chloride | 0.02 | nd | nd | nd | nd | nd | nd |
| Methyl *tert*- Butyl Ether (MTBE) | 0.05 | nd | nd | nd | nd | nd | nd |
| *trans* -1,2-Dichloroethene | 0.02 | nd | nd | nd | nd | nd | nd |
| *tert*- Butanol (TBA) | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,1-Dichloroethane | 0.03 | nd | nd | nd | nd | nd | nd |
| Ethyl-*tert*- Butal Ether (ETBE) | 0.10 | nd | nd | nd | nd | nd | nd |
| 2,2-Dichloropropane | 0.05 | nd | nd | nd | nd | nd | nd |
| *cis* -1,2-Dichloroethene | 0.02 | nd | nd | nd | nd | nd | nd |
| Chloroform | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,1,1-Trichloroethane (TCA) | 0.02 | nd | nd | nd | nd | nd | nd |
| Carbon tetrachloride | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,1-Dichloropropene | 0.02 | nd | nd | nd | nd | nd | nd |
| tert-Amyl Methyl Ether (TAME) | 0.02 | nd | nd | nd | nd | nd | nd |
| Benzene | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,2-Dichloroethane (EDC) | 0.03 | nd | nd | nd | nd | nd | nd |
| Trichloroethene (TCE) | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,2-Dichloropropane | 0.02 | nd | nd | nd | nd | nd | nd |
| Dibromomethane | 0.04 | nd | nd | nd | nd | nd | nd |
| Bromodichloromethane | 0.02 | nd | nd | nd | nd | nd | nd |
| cis-1,3-Dichloropropene | 0.02 | nd | nd | nd | nd | nd | nd |
| Toluene | 0.10 | nd | nd | nd | nd | nd | nd |
| Trans-1,3-Dichloropropene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,1,2-Trichloroethane | 0.03 | nd | nd | nd | nd | nd | nd |
| Tetrachloroethene (PCE) | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,3-Dichloropropane | 0.05 | nd | nd | nd | nd | nd | nd |
| Dibromochloromethane | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,2-Dibromoethane (EDB) * | 0.005 | nd | nd | nd | nd | nd | nd |
| Chlorobenzene | 0.02 | nd | nd | nd | nd | nd | nd |
| 1,1,1,2-Tetrachloroethane | 0.03 | nd | nd | nd | nd | nd | nd |
| Ethylbenzene | 0.05 | nd | nd | nd | nd | nd | nd |
| Total Xylenes | 0.15 | nd | nd | nd | nd | nd | nd |
| Styrene | 0.02 | nd | nd | nd | nd | nd | nd |

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com


PRAIRIE PIT PROJECT
Herrera Environmental
Frederickson, Washington
Libby Project # L190726-40
Client Project # 16-063-10-011

**Volatile Organic Compounds including Oxygenates by EPA Method 8260C in Soil**

| Sample Description | | Method Blank | Exc-G7B-1 | Exc-H1-1 | Exc-H2-1 | Exc-H2-1 Dup | Exc-H3-1 |
|---|---|---|---|---|---|---|---|
| Date Sampled | Reporting | N/A | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 |
| Date Analyzed | Limits | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 |
| | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| Bromoform | 0.03 | nd | nd | nd | nd | nd | nd |
| Isopropylbenzene | 0.05 | nd | nd | nd | nd | nd | nd |
| 1,2,3-Trichloropropane | 0.05 | nd | nd | nd | nd | nd | nd |
| Bromobenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,1,2,2-Tetrachloroethane | 0.03 | nd | nd | nd | nd | nd | nd |
| n-Propylbenzene | 0.04 | nd | nd | nd | nd | nd | nd |
| 2-Chlorotoluene | 0.03 | nd | nd | nd | nd | nd | nd |
| 4-Chlorotoluene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,3,5-Trimethylbenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| tert-Butylbenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,2,4-Trimethylbenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| sec-Butylbenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,3-Dichlorobenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| Isopropyltoluene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,4-Dichlorobenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| 1,2-Dichlorobenzene | 0.03 | nd | nd | nd | nd | nd | nd |
| n-Butylbenzene | 0.05 | nd | nd | nd | nd | nd | nd |
| 1,2-Dibromo-3-Chloropropane | 0.05 | nd | nd | nd | nd | nd | nd |
| 1,2,4-Trichlorolbenzene | 0.05 | nd | nd | nd | nd | nd | nd |
| Hexachloro-1,3-butadiene | 0.10 | nd | nd | nd | nd | nd | nd |
| Naphthalenes | 0.10 | nd | nd | nd | nd | nd | nd |
| 1,2,3-Trichlorobenzene | 0.10 | nd | nd | nd | nd | nd | nd |
| Surrogate Recovery | | | | | | | |
| Dibromofluoromethane | | 114 | 98 | 100 | 112 | 98 | 97 |
| 1,2-Dichloroethane-d4 | | 117 | 104 | 107 | 116 | 121 | 126 |
| Toluene-d8 | | 100 | 93 | 99 | 97 | 100 | 99 |
| 4-Bromofluorobenzene | | 74 | 74 | 73 | 72 | 76 | 75 |

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com


PRAIRIE PIT PROJECT
Herrera Environmental
Frederickson, Washington
Libby Project # L190726-40
Client Project # 16-063-10-011

**Volatile Organic Compounds including Oxygenates by EPA Method 8260C in Soil**

| Sample Description | | Exc-H5A-5 | Exc-H5B-5 | Exc-H7-8 | Exc-H6-6 | Exc-H4-1 |
|---|---|---|---|---|---|---|
| Date Sampled | Reporting | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 |
| Date Analyzed | Limits | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 |
| | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| Dichlorodifluoromethane | 0.06 | nd | nd | nd | nd | nd |
| Chloromethane | 0.06 | nd | nd | nd | nd | nd |
| Vinyl chloride | 0.02 | nd | nd | nd | nd | nd |
| Bromomethane | 0.09 | nd | nd | nd | nd | nd |
| Chloroethane | 0.06 | nd | nd | nd | nd | nd |
| Trichlorofluoromethane | 0.05 | nd | nd | nd | nd | nd |
| 1,1-Dichloroethene | 0.05 | nd | nd | nd | nd | nd |
| Methylene chloride | 0.02 | nd | nd | nd | nd | nd |
| Methyl *tert*- Butyl Ether (MTBE) | 0.05 | nd | nd | nd | nd | nd |
| *trans* -1,2-Dichloroethene | 0.02 | nd | nd | nd | nd | nd |
| *tert*- Butanol (TBA) | 0.02 | nd | nd | nd | nd | nd |
| 1,1-Dichloroethane | 0.03 | nd | nd | nd | nd | nd |
| Ethyl-*tert*- Butal Ether (ETBE) | 0.10 | nd | nd | nd | nd | nd |
| 2,2-Dichloropropane | 0.05 | nd | nd | nd | nd | nd |
| *cis* -1,2-Dichloroethene | 0.02 | nd | nd | nd | nd | nd |
| Chloroform | 0.02 | nd | nd | nd | nd | nd |
| 1,1,1-Trichloroethane (TCA) | 0.02 | nd | nd | nd | nd | nd |
| Carbon tetrachloride | 0.03 | nd | nd | nd | nd | nd |
| 1,1-Dichloropropene | 0.02 | nd | nd | nd | nd | nd |
| tert-Amyl Methyl Ether (TAME) | 0.02 | nd | nd | nd | nd | nd |
| Benzene | 0.02 | nd | nd | nd | nd | nd |
| 1,2-Dichloroethane (EDC) | 0.03 | nd | nd | nd | nd | nd |
| Trichloroethene (TCE) | 0.02 | nd | nd | nd | nd | nd |
| 1,2-Dichloropropane | 0.02 | nd | nd | nd | nd | nd |
| Dibromomethane | 0.04 | nd | nd | nd | nd | nd |
| Bromodichloromethane | 0.02 | nd | nd | nd | nd | nd |
| cis-1,3-Dichloropropene | 0.02 | nd | nd | nd | nd | nd |
| Toluene | 0.10 | nd | nd | nd | nd | nd |
| Trans-1,3-Dichloropropene | 0.03 | nd | nd | nd | nd | nd |
| 1,1,2-Trichloroethane | 0.03 | nd | nd | nd | nd | nd |
| Tetrachloroethene (PCE) | 0.02 | nd | nd | nd | nd | nd |
| 1,3-Dichloropropane | 0.05 | nd | nd | nd | nd | nd |
| Dibromochloromethane | 0.03 | nd | nd | nd | nd | nd |
| 1,2-Dibromoethane (EDB) * | 0.005 | nd | nd | nd | nd | nd |
| Chlorobenzene | 0.02 | nd | nd | nd | nd | nd |
| 1,1,1,2-Tetrachloroethane | 0.03 | nd | nd | nd | nd | nd |
| Ethylbenzene | 0.05 | nd | nd | nd | nd | nd |
| Total Xylenes | 0.15 | nd | nd | nd | nd | nd |
| Styrene | 0.02 | nd | nd | nd | nd | nd |

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

PRAIRIE PIT PROJECT
Herrera Environmental
Frederickson, Washington
Libby Project # L190726-40
Client Project # 16-063-10-011

**Volatile Organic Compounds including Oxygenates by EPA Method 8260C in Soil**

| Sample Description | | Exc-H5A-5 | Exc-H5B-5 | Exc-H7-8 | Exc-H6-6 | Exc-H4-1 |
|---|---|---|---|---|---|---|
| Date Sampled | Reporting | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 |
| Date Analyzed | Limits | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 |
| | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| Bromoform | 0.03 | nd | nd | nd | nd | nd |
| Isopropylbenzene | 0.05 | nd | nd | nd | nd | nd |
| 1,2,3-Trichloropropane | 0.05 | nd | nd | nd | nd | nd |
| Bromobenzene | 0.03 | nd | nd | nd | nd | nd |
| 1,1,2,2-Tetrachloroethane | 0.03 | nd | nd | nd | nd | nd |
| n-Propylbenzene | 0.04 | nd | nd | nd | nd | nd |
| 2-Chlorotoluene | 0.03 | nd | nd | nd | nd | nd |
| 4-Chlorotoluene | 0.03 | nd | nd | nd | nd | nd |
| 1,3,5-Trimethylbenzene | 0.03 | nd | nd | nd | nd | nd |
| tert-Butylbenzene | 0.03 | nd | nd | nd | nd | nd |
| 1,2,4-Trimethylbenzene | 0.03 | nd | nd | nd | nd | nd |
| sec-Butylbenzene | 0.03 | nd | nd | nd | nd | nd |
| 1,3-Dichlorobenzene | 0.03 | nd | nd | nd | nd | nd |
| Isopropyltoluene | 0.03 | nd | nd | nd | nd | nd |
| 1,4-Dichlorobenzene | 0.03 | nd | nd | nd | nd | nd |
| 1,2-Dichlorobenzene | 0.03 | nd | nd | nd | nd | nd |
| n-Butylbenzene | 0.05 | nd | nd | nd | nd | nd |
| 1,2-Dibromo-3-Chloropropane | 0.05 | nd | nd | nd | nd | nd |
| 1,2,4-Trichlorolbenzene | 0.05 | nd | nd | nd | nd | nd |
| Hexachloro-1,3-butadiene | 0.10 | nd | nd | nd | nd | nd |
| Naphthalenes | 0.10 | nd | nd | nd | nd | nd |
| 1,2,3-Trichlorobenzene | 0.10 | nd | nd | nd | nd | nd |
| Surrogate Recovery | | | | | | |
| Dibromofluoromethane | | 102 | 96 | 103 | 103 | 98 |
| 1,2-Dichloroethane-d4 | | 116 | 119 | 119 | 121 | 125 |
| Toluene-d8 | | 101 | 99 | 99 | 101 | 98 |
| 4-Bromofluorobenzene | | 79 | 102 | 72 | 78 | 72 |

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

PRAIRIE PIT PROJECT
Herrera Environmental
Frederickson, Washington
Libby Project # L190726-40
Client Project # 16-063-10-011

**QA/QC Data - EPA 8260C Analyses**

| | Sample Identification: Exc-5B-5 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Matrix Spike | | | Matrix Spike Duplicate | | | RPD |
| | Spiked Conc. (mg/kg) | Measured Conc. (mg/kg) | Spike Recovery (%) | Spiked Conc. (mg/kg) | Measured Conc. (mg/kg) | Spike Recovery (%) | |
| 1,1-Dichloroethene | 0.50 | 0.33 | 66 | 0.50 | 0.33 | 65 | 1.5 |
| Benzene | 0.50 | 0.46 | 92 | 0.50 | 0.46 | 91 | 1.1 |
| Toluene | 0.50 | 0.53 | 105 | 0.50 | 0.51 | 102 | 3.3 |
| Chlorobenzene | 0.50 | 0.58 | 116 | 0.50 | 0.60 | 120 | 3.2 |
| Trichloroethene (TCE) | 0.50 | 0.40 | 81 | 0.50 | 0.42 | 84 | 4.5 |
| Surrogate Recovery | | | | | | | |
| Dibromofluoromethane | | | 99 | | | 106 | |
| 1,2-Dichloroethane-d4 | | | 116 | | | 125 | |
| Toluene-d8 | | | 109 | | | 101 | |
| 4-Bromofluorobenzene | | | 84 | | | 88 | |

| | Laboratory Control Sample | | |
|---|---|---|---|
| | Spiked Conc. (mg/kg) | Measured Conc. (mg/kg) | Spike Recovery (%) |
| 1,1-Dichloroethene | 0.50 | 0.40 | 81 |
| Benzene | 0.50 | 0.45 | 89 |
| Toluene | 0.50 | 0.46 | 92 |
| Chlorobenzene | 0.50 | 0.61 | 122 |
| Trichloroethene (TCE) | 0.50 | 0.41 | 81 |
| Surrogate Recovery | | | |
| Dibromofluoromethane | | | 121 |
| 1,2-Dichloroethane-d4 | | | 115 |
| Toluene-d8 | | | 97 |
| 4-Bromofluorobenzene | | | 71 |

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 65%-135%
ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Kodey Eley

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

PRAIRIE PIT PROJECT
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Frederickson, Washington
Libby Project # L190726-40
Client Project # 16-063-10-011

## Analyses of Gasoline (NWTPH-Gx) in Soil

| Sample Number | Date Analyzed | Surrogate Recovery (%) | Gasoline (mg/kg) |
|---|---|---|---|
| Method Blank | 7/26/19 | 100% | nd |
| Exc-G7B-1 | 7/26/19 | 93% | nd |
| Exc-H1-1 | 7/26/19 | 99% | nd |
| Exc-H2-1 | 7/26/19 | 97% | nd |
| Exc-H2-1 Dup | 7/26/19 | 100% | nd |
| Exc-H5A-5 | 7/26/19 | 99% | nd |
| Exc-H5B-5 | 7/26/19 | 99% | nd |
| Exc-H7-8 | 7/26/19 | 99% | nd |
| Exc-H6-6 | 7/26/19 | 101% | nd |
| Exc-H4-1 | 7/26/19 | 98% | nd |
| Practical Quantitation Limit | | | 10 |

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

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**Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil**

| Sample Number | Date Analyzed | Surrogate Recovery (%) | Diesel (mg/kg) | Oil (mg/kg) |
|---|---|---|---|---|
| Method Blank | 7/26/19 | 102 | nd | nd |
| Exc-G7B-1 | 7/26/19 | 102 | nd | nd |
| Exc-H1-1 | 7/26/19 | 88 | nd | 1200 |
| Exc-H2-1 | 7/26/19 | 105 | nd | nd |
| Exc-H2-1 Dup | 7/26/19 | 80 | nd | nd |
| Exc-H3-1 | 7/26/19 | 98 | nd | nd |
| Exc-H5C-5 | 7/26/19 | 92 | nd | 256 |
| Exc-H1B-1.5 | 7/26/19 | 85 | nd | nd |
| Exc-H7-8 | 7/26/19 | 93 | nd | nd |
| Exc-H6-6 | 7/26/19 | 106 | nd | nd |
| Ditch-5B-1 | 7/26/19 | 104 | nd | nd |
| Exc-H4-1 | 7/26/19 | 88 | nd | nd |
| Exc-F2B-1.5 | 7/26/19 | 83 | nd | nd |
| Exc-F2B-1.5 Dup | 7/26/19 | 83 | nd | nd |
| Practical Quantitation Limit | | | 50 | 250 |

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

PRAIRIE PIT PROJECT
Herrera Environmental
Frederickson, Washington
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Client Project # 16-063-10-011

**Analyses of PCB (Polychlorinated Biphenyls) in Soil by EPA Method 8082**

| Sample Description | PQL | Method Blank | LCS | Exc-H5C-5 | Exc-F2B-1.5 | Exc-F2B-1.5 Dup | Exc-H5C-5 MS |
|---|---|---|---|---|---|---|---|
| Date Sampled | | N/A | N/A | 7/26/19 | 7/26/19 | 7/26/19 | 7/26/19 |
| Date Analyzed | | 7/31/19 | 7/31/19 | 7/31/19 | 7/31/19 | 7/31/19 | 7/31/19 |
| | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| Aroclor 1016 | 0.1 | nd | 102% | nd | nd | nd | 99% |
| Aroclor 1221 | 0.1 | nd | | nd | nd | nd | |
| Aroclor 1232 | 0.1 | nd | | nd | nd | nd | |
| Aroclor 1242 | 0.1 | nd | | nd | nd | nd | |
| Aroclor 1248 | 0.1 | nd | | nd | nd | nd | |
| Aroclor 1254 | 0.1 | nd | | nd | nd | nd | |
| Aroclor 1260 | 0.1 | nd | 95% | nd | nd | nd | 106% |
| Surrogate Recovery | | | | | | | |
| TCMX | | 104 | 102 | 100 | 84 | 123 | 102 |
| DCBP | | 97 | 100 | 112 | 99 | 111 | 105 |

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%
ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Paul Burke

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

PRAIRIE PIT PROJECT
Herrera Environmental
Frederickson, Washington
Libby Project # L190726-40
Client Project # 16-063-10-011

**Analyses of Total Metals in Soil by EPA Method 7010 Series**

| Sample Number | Date Analyzed | Lead (mg/kg) | Cadmium (mg/kg) | Chromium (mg/kg) | Zinc (mg/kg) |
|---|---|---|---|---|---|
| Method Blank | 7/30/19 | nd | nd | nd | nd |
| Exc-G7B-1 | 7/30/19 | nd | nd | nd | 10 |
| Exc-H2-1 | 7/30/19 | nd | nd | nd | 13 |
| Exc-H3-1 | 7/30/19 | 78 | nd | 8.9 | 9.0 |
| Exc-H5C-5 | 7/30/19 | 42 | nd | 12 | 6.8 |
| Exc-H1B-1.5 | 7/30/19 | nd | nd | nd | 12 |
| Exc-H7-8 | 7/30/19 | nd | nd | 7.0 | 14 |
| Exc-H6-6 | 7/30/19 | 6.7 | nd | 7.4 | 15 |
| Ditch-5B-1 | 7/30/19 | 10 | nd | nd | 7.9 |
| Exc-H4-1 | 7/30/19 | nd | nd | nd | 13 |
| Exc-F2B-1.5 | 7/30/19 | nd | nd | nd | 9.3 |
| Exc-F2B-1.5 Dup | 7/30/19 | nd | nd | nd | 9.8 |
| Practical Quantitation Limit | | 5.0 | 1.0 | 5.0 | 5.0 |

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Dirk Peterson

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

PRAIRIE PIT PROJECT
Herrera Environmental
Frederickson, Washington
Libby Project # L190726-40
Client Project # 16-063-10-011

## QA/QC for Total Metals in Soil by EPA Method 7010 Series

| Sample Number | Date Analyzed | Lead (% Recovery) | Cadmium (% Recovery) | Chromium (% Recovery) | Zinc (% Recovery) |
|---|---|---|---|---|---|
| LCS | 7/30/19 | 102% | 108% | 105% | 93% |
| EXC-F2B-1.5 MS | 7/30/19 | 90% | 85% | 85% | 87% |
| EXC-F2B-1.5 MSD | 7/30/19 | 94% | 86% | 85% | 91% |
| RPD | 7/30/19 | 4% | 1% | 0% | 4% |

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Dirk Peterson

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

**Libby Environmental**
Sherry Chilcutt
3322 South Bay Road NE
Olympia, WA 98506

**RE: Prairie Pit**
**Work Order Number: 1907372**

August 02, 2019

**Attention Sherry Chilcutt:**

Fremont Analytical, Inc. received 18 sample(s) on 7/29/2019 for the analyses presented in the following report.

***Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)***
***Sample Moisture (Percent Moisture)***

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

**Date:** *08/02/2019*

**CLIENT:** Libby Environmental
**Project:** Prairie Pit
**Work Order:** 1907372

# Work Order Sample Summary

| Lab Sample ID | Client Sample ID | Date/Time Collected | Date/Time Received |
|---|---|---|---|
| 1907372-001 | TP-L-0 | 07/23/2019 10:15 AM | 07/29/2019 2:52 PM |
| 1907372-002 | Ditch-6-0 | 07/23/2019 3:10 PM | 07/29/2019 2:52 PM |
| 1907372-003 | EXC-E1-4 | 07/23/2019 10:30 AM | 07/29/2019 2:52 PM |
| 1907372-004 | EXC-F1-0 | 07/23/2019 2:00 PM | 07/29/2019 2:52 PM |
| 1907372-005 | EXC-G1-1 | 07/24/2019 12:10 PM | 07/29/2019 2:52 PM |
| 1907372-006 | EXC-G3-2.5 | 07/24/2019 12:30 PM | 07/29/2019 2:52 PM |
| 1907372-007 | EXC-G4-1 | 07/25/2019 9:40 AM | 07/29/2019 2:52 PM |
| 1907372-008 | EXC-G5-1 | 07/25/2019 10:10 AM | 07/29/2019 2:52 PM |
| 1907372-009 | EXC-G7-B-1 | 07/26/2019 8:30 AM | 07/29/2019 2:52 PM |
| 1907372-010 | EXC-H2-1 | 07/26/2019 11:00 AM | 07/29/2019 2:52 PM |
| 1907372-011 | EXC-H3-1 | 07/26/2019 11:30 AM | 07/29/2019 2:52 PM |
| 1907372-012 | EXC-H5c-5 | 07/26/2019 12:00 AM | 07/29/2019 2:52 PM |
| 1907372-013 | EXC-H1B-1.5 | 07/26/2019 3:20 PM | 07/29/2019 2:52 PM |
| 1907372-014 | EXC-H7-8 | 07/26/2019 2:20 PM | 07/29/2019 2:52 PM |
| 1907372-015 | EXC-H6-6 | 07/26/2019 2:50 PM | 07/29/2019 2:52 PM |
| 1907372-016 | Ditch-5B-1 | 07/26/2019 3:45 PM | 07/29/2019 2:52 PM |
| 1907372-017 | EXC-F2B-1.5 | 07/26/2019 3:55 PM | 07/29/2019 2:52 PM |
| 1907372-018 | EXC-H4-1 | 07/26/2019 2:00 PM | 07/29/2019 2:52 PM |



Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

# Case Narrative

WO#: **1907372**

Date: **8/2/2019**

**CLIENT:** Libby Environmental
**Project:** Prairie Pit

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.

8/2/19: Revision 1 includes a revised sample ID.

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 (<20%RSD, <20% Drift or minimum RRF)
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
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/23/2019 10:15:00 AM
**Project:** Prairie Pit
**Lab ID:** 1907372-001
**Matrix:** Soil
**Client Sample ID:** **TP-L-0**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| 2-Methylnaphthalene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| 1-Methylnaphthalene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| Benz(a)anthracene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| Chrysene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| Benzo(b)fluoranthene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| Benzo(k)fluoranthene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| Benzo(a)pyrene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| Indeno(1,2,3-cd)pyrene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| Dibenz(a,h)anthracene | ND | 50.1 | | µg/Kg-dry | 1 | 7/30/2019 11:10:23 PM |
| Surr: 2-Fluorobiphenyl | 62.5 | 19.4 - 157 | | %Rec | 1 | 7/30/2019 11:10:23 PM |
| Surr: Terphenyl-d14 (surr) | 60.2 | 31.5 - 173 | | %Rec | 1 | 7/30/2019 11:10:23 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 22.0 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/23/2019 3:10:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-002
**Matrix:** Soil
**Client Sample ID:** **Ditch-6-0**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| 2-Methylnaphthalene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| 1-Methylnaphthalene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| Benz(a)anthracene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| Chrysene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| Benzo(b)fluoranthene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| Benzo(k)fluoranthene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| Benzo(a)pyrene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| Indeno(1,2,3-cd)pyrene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| Dibenz(a,h)anthracene | ND | 42.3 | | µg/Kg-dry | 1 | 7/30/2019 11:51:42 PM |
| Surr: 2-Fluorobiphenyl | 78.2 | 19.4 - 157 | | %Rec | 1 | 7/30/2019 11:51:42 PM |
| Surr: Terphenyl-d14 (surr) | 102 | 31.5 - 173 | | %Rec | 1 | 7/30/2019 11:51:42 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 7.31 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/23/2019 10:30:00 AM
**Project:** Prairie Pit
**Lab ID:** 1907372-003
**Matrix:** Soil
**Client Sample ID:** **EXC-E1-4**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| 2-Methylnaphthalene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| 1-Methylnaphthalene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| Benz(a)anthracene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| Chrysene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| Benzo(b)fluoranthene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| Benzo(k)fluoranthene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| Benzo(a)pyrene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| Indeno(1,2,3-cd)pyrene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| Dibenz(a,h)anthracene | ND | 44.6 | | µg/Kg-dry | 1 | 7/31/2019 12:12:20 AM |
| Surr: 2-Fluorobiphenyl | 65.8 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 12:12:20 AM |
| Surr: Terphenyl-d14 (surr) | 72.7 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 12:12:20 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 13.4 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/23/2019 2:00:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-004
**Matrix:** Soil
**Client Sample ID:** **EXC-F1-0**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| 2-Methylnaphthalene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| 1-Methylnaphthalene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| Benz(a)anthracene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| Chrysene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| Benzo(b)fluoranthene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| Benzo(k)fluoranthene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| Benzo(a)pyrene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| Indeno(1,2,3-cd)pyrene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| Dibenz(a,h)anthracene | ND | 40.9 | | µg/Kg-dry | 1 | 7/31/2019 12:33:01 AM |
| Surr: 2-Fluorobiphenyl | 83.9 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 12:33:01 AM |
| Surr: Terphenyl-d14 (surr) | 100 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 12:33:01 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 7.80 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/24/2019 12:10:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-005
**Matrix:** Soil
**Client Sample ID:** **EXC-G1-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| 2-Methylnaphthalene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| 1-Methylnaphthalene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| Benz(a)anthracene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| Chrysene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| Benzo(b)fluoranthene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| Benzo(k)fluoranthene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| Benzo(a)pyrene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| Indeno(1,2,3-cd)pyrene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| Dibenz(a,h)anthracene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 12:53:38 AM |
| Surr: 2-Fluorobiphenyl | 73.9 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 12:53:38 AM |
| Surr: Terphenyl-d14 (surr) | 96.1 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 12:53:38 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 4.38 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/24/2019 12:30:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-006
**Matrix:** Soil
**Client Sample ID:** **EXC-G3-2.5**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| 2-Methylnaphthalene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| 1-Methylnaphthalene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| Benz(a)anthracene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| Chrysene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| Benzo(b)fluoranthene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| Benzo(k)fluoranthene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| Benzo(a)pyrene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| Indeno(1,2,3-cd)pyrene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| Dibenz(a,h)anthracene | ND | 38.7 | | µg/Kg-dry | 1 | 7/31/2019 1:14:14 AM |
| Surr: 2-Fluorobiphenyl | 75.7 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 1:14:14 AM |
| Surr: Terphenyl-d14 (surr) | 74.4 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 1:14:14 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 8.58 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/25/2019 9:40:00 AM
**Project:** Prairie Pit
**Lab ID:** 1907372-007
**Matrix:** Soil
**Client Sample ID:** **EXC-G4-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| 2-Methylnaphthalene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| 1-Methylnaphthalene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| Benz(a)anthracene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| Chrysene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| Benzo(b)fluoranthene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| Benzo(k)fluoranthene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| Benzo(a)pyrene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| Indeno(1,2,3-cd)pyrene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| Dibenz(a,h)anthracene | ND | 41.6 | | µg/Kg-dry | 1 | 7/31/2019 1:34:53 AM |
| Surr: 2-Fluorobiphenyl | 68.4 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 1:34:53 AM |
| Surr: Terphenyl-d14 (surr) | 67.1 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 1:34:53 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 11.2 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/25/2019 10:10:00 AM
**Project:** Prairie Pit
**Lab ID:** 1907372-008
**Matrix:** Soil
**Client Sample ID:** **EXC-G5-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| 2-Methylnaphthalene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| 1-Methylnaphthalene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| Benz(a)anthracene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| Chrysene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| Benzo(b)fluoranthene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| Benzo(k)fluoranthene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| Benzo(a)pyrene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| Indeno(1,2,3-cd)pyrene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| Dibenz(a,h)anthracene | ND | 40.0 | | µg/Kg-dry | 1 | 7/31/2019 1:55:28 AM |
| Surr: 2-Fluorobiphenyl | 73.5 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 1:55:28 AM |
| Surr: Terphenyl-d14 (surr) | 72.0 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 1:55:28 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 4.10 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 8:30:00 AM
**Project:** Prairie Pit
**Lab ID:** 1907372-009
**Matrix:** Soil
**Client Sample ID:** **EXC-G7-B-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| 2-Methylnaphthalene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| 1-Methylnaphthalene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| Benz(a)anthracene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| Chrysene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| Benzo(b)fluoranthene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| Benzo(k)fluoranthene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| Benzo(a)pyrene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| Indeno(1,2,3-cd)pyrene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| Dibenz(a,h)anthracene | ND | 41.3 | | µg/Kg-dry | 1 | 7/31/2019 2:16:03 AM |
| Surr: 2-Fluorobiphenyl | 73.7 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 2:16:03 AM |
| Surr: Terphenyl-d14 (surr) | 83.9 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 2:16:03 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 3.35 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 11:00:00 AM
**Project:** Prairie Pit
**Lab ID:** 1907372-010
**Matrix:** Soil
**Client Sample ID:** **EXC-H2-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| 2-Methylnaphthalene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| 1-Methylnaphthalene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| Benz(a)anthracene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| Chrysene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| Benzo(b)fluoranthene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| Benzo(k)fluoranthene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| Benzo(a)pyrene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| Indeno(1,2,3-cd)pyrene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| Dibenz(a,h)anthracene | ND | 37.2 | | µg/Kg-dry | 1 | 7/31/2019 2:36:44 AM |
| Surr: 2-Fluorobiphenyl | 67.6 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 2:36:44 AM |
| Surr: Terphenyl-d14 (surr) | 77.5 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 2:36:44 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 8.13 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 11:30:00 AM
**Project:** Prairie Pit
**Lab ID:** 1907372-011
**Matrix:** Soil
**Client Sample ID:** **EXC-H3-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| 2-Methylnaphthalene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| 1-Methylnaphthalene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| Benz(a)anthracene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| Chrysene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| Benzo(b)fluoranthene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| Benzo(k)fluoranthene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| Benzo(a)pyrene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| Indeno(1,2,3-cd)pyrene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| Dibenz(a,h)anthracene | ND | 40.2 | | µg/Kg-dry | 1 | 7/31/2019 3:38:29 AM |
| Surr: 2-Fluorobiphenyl | 83.4 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 3:38:29 AM |
| Surr: Terphenyl-d14 (surr) | 103 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 3:38:29 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 4.42 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019
**Project:** Prairie Pit
**Lab ID:** 1907372-012
**Matrix:** Soil
**Client Sample ID:** **EXC-H5c-5**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| 2-Methylnaphthalene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| 1-Methylnaphthalene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| Benz(a)anthracene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| Chrysene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| Benzo(b)fluoranthene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| Benzo(k)fluoranthene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| Benzo(a)pyrene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| Indeno(1,2,3-cd)pyrene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| Dibenz(a,h)anthracene | ND | 37.8 | | µg/Kg-dry | 1 | 7/31/2019 3:59:02 AM |
| Surr: 2-Fluorobiphenyl | 95.0 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 3:59:02 AM |
| Surr: Terphenyl-d14 (surr) | 105 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 3:59:02 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 4.07 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 3:20:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-013
**Matrix:** Soil
**Client Sample ID:** **EXC-H1B-1.5**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| 2-Methylnaphthalene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| 1-Methylnaphthalene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| Benz(a)anthracene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| Chrysene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| Benzo(b)fluoranthene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| Benzo(k)fluoranthene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| Benzo(a)pyrene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| Indeno(1,2,3-cd)pyrene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| Dibenz(a,h)anthracene | ND | 42.0 | | µg/Kg-dry | 1 | 7/31/2019 4:19:34 AM |
| Surr: 2-Fluorobiphenyl | 93.2 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 4:19:34 AM |
| Surr: Terphenyl-d14 (surr) | 95.0 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 4:19:34 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 6.64 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 2:20:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-014
**Matrix:** Soil
**Client Sample ID:** **EXC-H7-8**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| 2-Methylnaphthalene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| 1-Methylnaphthalene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| Benz(a)anthracene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| Chrysene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| Benzo(b)fluoranthene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| Benzo(k)fluoranthene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| Benzo(a)pyrene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| Indeno(1,2,3-cd)pyrene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| Dibenz(a,h)anthracene | ND | 42.2 | | µg/Kg-dry | 1 | 7/31/2019 4:40:12 AM |
| Surr: 2-Fluorobiphenyl | 80.6 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 4:40:12 AM |
| Surr: Terphenyl-d14 (surr) | 97.2 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 4:40:12 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 8.06 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 2:50:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-015
**Matrix:** Soil
**Client Sample ID:** **EXC-H6-6**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| 2-Methylnaphthalene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| 1-Methylnaphthalene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| Benz(a)anthracene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| Chrysene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| Benzo(b)fluoranthene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| Benzo(k)fluoranthene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| Benzo(a)pyrene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| Indeno(1,2,3-cd)pyrene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| Dibenz(a,h)anthracene | ND | 43.7 | | µg/Kg-dry | 1 | 7/31/2019 5:00:43 AM |
| Surr: 2-Fluorobiphenyl | 77.0 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 5:00:43 AM |
| Surr: Terphenyl-d14 (surr) | 91.1 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 5:00:43 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 13.7 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 3:45:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-016
**Matrix:** Soil
**Client Sample ID:** **Ditch-5B-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| 2-Methylnaphthalene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| 1-Methylnaphthalene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| Benz(a)anthracene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| Chrysene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| Benzo(b)fluoranthene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| Benzo(k)fluoranthene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| Benzo(a)pyrene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| Indeno(1,2,3-cd)pyrene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| Dibenz(a,h)anthracene | ND | 39.1 | | µg/Kg-dry | 1 | 7/31/2019 5:21:16 AM |
| Surr: 2-Fluorobiphenyl | 91.0 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 5:21:16 AM |
| Surr: Terphenyl-d14 (surr) | 102 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 5:21:16 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 1.43 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 3:55:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-017
**Matrix:** Soil
**Client Sample ID:** **EXC-F2B-1.5**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| 2-Methylnaphthalene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| 1-Methylnaphthalene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| Benz(a)anthracene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| Chrysene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| Benzo(b)fluoranthene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| Benzo(k)fluoranthene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| Benzo(a)pyrene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| Indeno(1,2,3-cd)pyrene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| Dibenz(a,h)anthracene | ND | 42.8 | | µg/Kg-dry | 1 | 7/31/2019 5:41:54 AM |
| Surr: 2-Fluorobiphenyl | 63.2 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 5:41:54 AM |
| Surr: Terphenyl-d14 (surr) | 60.6 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 5:41:54 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 12.2 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

# Analytical Report

Work Order: **1907372**
Date Reported: **8/2/2019**

**Client:** Libby Environmental
**Collection Date:** 7/26/2019 2:00:00 PM
**Project:** Prairie Pit
**Lab ID:** 1907372-018
**Matrix:** Soil
**Client Sample ID:** **EXC-H4-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)** | | | | Batch ID: 25341 | | Analyst: SB |
| Naphthalene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| 2-Methylnaphthalene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| 1-Methylnaphthalene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| Benz(a)anthracene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| Chrysene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| Benzo(b)fluoranthene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| Benzo(k)fluoranthene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| Benzo(a)pyrene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| Indeno(1,2,3-cd)pyrene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| Dibenz(a,h)anthracene | ND | 35.9 | | µg/Kg-dry | 1 | 7/31/2019 6:02:28 AM |
| Surr: 2-Fluorobiphenyl | 86.0 | 19.4 - 157 | | %Rec | 1 | 7/31/2019 6:02:28 AM |
| Surr: Terphenyl-d14 (surr) | 93.6 | 31.5 - 173 | | %Rec | 1 | 7/31/2019 6:02:28 AM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R52935 | | Analyst: KP |
| Percent Moisture | 4.50 | 0.500 | | wt% | 1 | 7/29/2019 3:24:07 PM |

**Work Order:** 1907372
**CLIENT:** Libby Environmental
**Project:** Prairie Pit

# QC SUMMARY REPORT

## Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **MB-25341** SampType: **MBLK** Units: **µg/Kg** Prep Date: **7/30/2019** RunNo: **52974**
Client ID: **MBLKS** Batch ID: **25341** Analysis Date: **7/30/2019** SeqNo: **1046577**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | ND | 40.0 | | | | | | | | | |
| 2-Methylnaphthalene | ND | 40.0 | | | | | | | | | |
| 1-Methylnaphthalene | ND | 40.0 | | | | | | | | | |
| Benz(a)anthracene | ND | 40.0 | | | | | | | | | |
| Chrysene | ND | 40.0 | | | | | | | | | |
| Benzo(b)fluoranthene | ND | 40.0 | | | | | | | | | |
| Benzo(k)fluoranthene | ND | 40.0 | | | | | | | | | |
| Benzo(a)pyrene | ND | 40.0 | | | | | | | | | |
| Indeno(1,2,3-cd)pyrene | ND | 40.0 | | | | | | | | | |
| Dibenz(a,h)anthracene | ND | 40.0 | | | | | | | | | |
| Surr: 2-Fluorobiphenyl | 291 | | 500.0 | | 58.1 | 19.4 | 157 | | | | |
| Surr: Terphenyl-d14 (surr) | 395 | | 500.0 | | 78.9 | 31.5 | 173 | | | | |

Sample ID: **LCS-25341** SampType: **LCS** Units: **µg/Kg** Prep Date: **7/30/2019** RunNo: **52974**
Client ID: **LCSS** Batch ID: **25341** Analysis Date: **7/30/2019** SeqNo: **1046579**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | 939 | 40.0 | 1,000 | 0 | 93.9 | 52.9 | 134 | | | | |
| 2-Methylnaphthalene | 1,050 | 40.0 | 1,000 | 0 | 105 | 45.1 | 135 | | | | |
| 1-Methylnaphthalene | 1,030 | 40.0 | 1,000 | 0 | 103 | 55.7 | 141 | | | | |
| Benz(a)anthracene | 905 | 40.0 | 1,000 | 0 | 90.5 | 36.6 | 142 | | | | |
| Chrysene | 967 | 40.0 | 1,000 | 0 | 96.7 | 43 | 165 | | | | |
| Benzo(b)fluoranthene | 882 | 40.0 | 1,000 | 0 | 88.2 | 41 | 155 | | | | |
| Benzo(k)fluoranthene | 1,020 | 40.0 | 1,000 | 0 | 102 | 30.6 | 164 | | | | |
| Benzo(a)pyrene | 998 | 40.0 | 1,000 | 0 | 99.8 | 30.2 | 171 | | | | |
| Indeno(1,2,3-cd)pyrene | 913 | 40.0 | 1,000 | 0 | 91.3 | 31.3 | 159 | | | | |
| Dibenz(a,h)anthracene | 910 | 40.0 | 1,000 | 0 | 91.0 | 28 | 158 | | | | |
| Surr: 2-Fluorobiphenyl | 439 | | 500.0 | | 87.9 | 19.4 | 157 | | | | |
| Surr: Terphenyl-d14 (surr) | 476 | | 500.0 | | 95.1 | 31.5 | 173 | | | | |

**Work Order:** 1907372
**CLIENT:** Libby Environmental
**Project:** Prairie Pit

# QC SUMMARY REPORT

## Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **1907372-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **7/30/2019** RunNo: **52974**
Client ID: **TP-L-0** Batch ID: **25341** Analysis Date: **7/30/2019** SeqNo: **1046581**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | ND | 50.3 | | | | | | 0 | | 30 | |
| 2-Methylnaphthalene | ND | 50.3 | | | | | | 0 | | 30 | |
| 1-Methylnaphthalene | ND | 50.3 | | | | | | 0 | | 30 | |
| Benz(a)anthracene | ND | 50.3 | | | | | | 0 | | 30 | |
| Chrysene | ND | 50.3 | | | | | | 0 | | 30 | |
| Benzo(b)fluoranthene | ND | 50.3 | | | | | | 0 | | 30 | |
| Benzo(k)fluoranthene | ND | 50.3 | | | | | | 0 | | 30 | |
| Benzo(a)pyrene | ND | 50.3 | | | | | | 0 | | 30 | |
| Indeno(1,2,3-cd)pyrene | ND | 50.3 | | | | | | 0 | | 30 | |
| Dibenz(a,h)anthracene | ND | 50.3 | | | | | | 0 | | 30 | |
| Surr: 2-Fluorobiphenyl | 483 | | 628.9 | | 76.8 | 19.4 | 157 | | 0 | | |
| Surr: Terphenyl-d14 (surr) | 422 | | 628.9 | | 67.1 | 31.5 | 173 | | 0 | | |

Sample ID: **1907372-010AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **7/30/2019** RunNo: **52974**
Client ID: **EXC-H2-1** Batch ID: **25341** Analysis Date: **7/31/2019** SeqNo: **1046591**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | 743 | 38.5 | 961.6 | 0 | 77.3 | 38.9 | 124 | | | | |
| 2-Methylnaphthalene | 721 | 38.5 | 961.6 | 0 | 74.9 | 42.8 | 151 | | | | |
| 1-Methylnaphthalene | 734 | 38.5 | 961.6 | 0 | 76.4 | 38.4 | 125 | | | | |
| Benz(a)anthracene | 997 | 38.5 | 961.6 | 6.389 | 103 | 34.9 | 139 | | | | |
| Chrysene | 756 | 38.5 | 961.6 | 0 | 78.7 | 45.2 | 146 | | | | |
| Benzo(b)fluoranthene | 873 | 38.5 | 961.6 | 0 | 90.8 | 42.2 | 168 | | | | |
| Benzo(k)fluoranthene | 717 | 38.5 | 961.6 | 0 | 74.5 | 20.5 | 150 | | | | |
| Benzo(a)pyrene | 872 | 38.5 | 961.6 | 0 | 90.7 | 34.4 | 179 | | | | |
| Indeno(1,2,3-cd)pyrene | 698 | 38.5 | 961.6 | 0 | 72.6 | 11.8 | 140 | | | | |
| Dibenz(a,h)anthracene | 689 | 38.5 | 961.6 | 0 | 71.6 | 17.3 | 156 | | | | |
| Surr: 2-Fluorobiphenyl | 390 | | 480.8 | | 81.1 | 19.4 | 157 | | | | |
| Surr: Terphenyl-d14 (surr) | 464 | | 480.8 | | 96.4 | 31.5 | 173 | | | | |

**Work Order:** 1907372
**CLIENT:** Libby Environmental
**Project:** Prairie Pit

# QC SUMMARY REPORT

## Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **1907372-010AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **7/30/2019** RunNo: **52974**
Client ID: **EXC-H2-1** Batch ID: **25341** Analysis Date: **7/31/2019** SeqNo: **1046592**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | 976 | 40.2 | 1,006 | 0 | 97.0 | 38.9 | 124 | 743.2 | 27.1 | 30 | |
| 2-Methylnaphthalene | 1,030 | 40.2 | 1,006 | 0 | 103 | 42.8 | 151 | 720.6 | 35.5 | 30 | R |
| 1-Methylnaphthalene | 979 | 40.2 | 1,006 | 0 | 97.3 | 38.4 | 125 | 734.3 | 28.5 | 30 | |
| Benz(a)anthracene | 1,120 | 40.2 | 1,006 | 6.389 | 111 | 34.9 | 139 | 996.6 | 11.7 | 30 | |
| Chrysene | 1,020 | 40.2 | 1,006 | 0 | 101 | 45.2 | 146 | 756.4 | 29.2 | 30 | |
| Benzo(b)fluoranthene | 971 | 40.2 | 1,006 | 0 | 96.5 | 42.2 | 168 | 872.8 | 10.6 | 30 | |
| Benzo(k)fluoranthene | 1,130 | 40.2 | 1,006 | 0 | 112 | 20.5 | 150 | 716.8 | 44.4 | 30 | R |
| Benzo(a)pyrene | 1,140 | 40.2 | 1,006 | 0 | 113 | 34.4 | 179 | 871.9 | 26.8 | 30 | |
| Indeno(1,2,3-cd)pyrene | 1,000 | 40.2 | 1,006 | 0 | 99.6 | 11.8 | 140 | 698.4 | 35.7 | 30 | R |
| Dibenz(a,h)anthracene | 980 | 40.2 | 1,006 | 0 | 97.4 | 17.3 | 156 | 688.5 | 34.9 | 30 | R |
| Surr: 2-Fluorobiphenyl | 501 | | 503.0 | | 99.7 | 19.4 | 157 | | 0 | | |
| Surr: Terphenyl-d14 (surr) | 534 | | 503.0 | | 106 | 31.5 | 173 | | 0 | | |

**NOTES:**
R - High RPD observed, spike recovery is within range.

**Work Order:** 1907372
**CLIENT:** Libby Environmental
**Project:** Prairie Pit

# QC SUMMARY REPORT

## Sample Moisture (Percent Moisture)

Sample ID: **1907372-004ADUP** SampType: **DUP** Units: **wt%** Prep Date: **7/29/2019** RunNo: **52935**
Client ID: **EXC-F1-0** Batch ID: **R52935** Analysis Date: **7/29/2019** SeqNo: **1045928**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 7.09 | 0.500 | | | | | | 7.799 | 9.58 | 20 | |

Sample ID: **1907372-016ADUP** SampType: **DUP** Units: **wt%** Prep Date: **7/29/2019** RunNo: **52935**
Client ID: **Ditch-5B-1** Batch ID: **R52935** Analysis Date: **7/29/2019** SeqNo: **1045941**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 1.39 | 0.500 | | | | | | 1.432 | 2.79 | 20 | |

# Sample Log-In Check List

| | | | |
|---|---|---|---|
| Client Name: | **LIBBY** | Work Order Number: | **1907372** |
| Logged by: | **Clare Griggs** | Date Received: | **7/29/2019 2:52:00 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 Required ☑ |
| 6. | Was an attempt made to cool the samples? | Yes ☑ | No ☐ | NA ☐ |
| 7. | Were all items received at a temperature of >0°C to 10.0°C * | Yes ☐ | No ☑ | NA ☐ |
| | | **Refer to item information.** | | |
| 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 ☐ |
| 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: | Kodey Eley | Date: | 7/30/2019 |
| By Whom: | Clare Griggs | Via: | ☑ eMail ☐ Phone ☐ Fax ☐ In Person |
| Regarding: | Confirming sample names / COC. | | |
| Client Instructions: | | | |

19. Additional remarks:

**Item Information**

| Item # | Temp °C |
|---|---|
| Cooler | 6.4 |
| Sample | 22.0 |

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

## Chain of Custody Record

1907372

www.LibbyEnvironmental.com

Date: 7/29/19 Page: 1 of 2

Project Manager: Sherry Chilcutt

Client: Libby Environmental, Inc

Address: See above

Project Name: Prairie Pit

City: State: Zip:

Location: City, State: WA

Phone: Fax:

Collector: Date of Collection: 7/23-7/26

Client Project #

Email: LibbyEnv@Gmail.com



| | Sample Number | Date ~~Depth~~ | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270 + Naphthalene | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | | | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TP-L-0 | 7-23-19 | 1015 | Soil | 4oz Jar | | | | | | | X | | | | | | | | |
| 2 | Ditch-6-0 | " | 1510 | " | " | | | | | | | X | | | | | | | | |
| 3 | EXC-E1-4 | " | 1035 | " | " | | | | | | | X | | | | | | | | |
| 4 | ~~EXC~~-F1-0 | " | 1400 | " | " | | | | | | | X | | | | | | | | |
| 5 | EXC-G1-1 | 7-24-19 | 1210 | " | " | | | | | | | X | | | | | | | | |
| 6 | EXC-G3-2.5 | " | 1230 | " | " | | | | | | | X | | | | | | | | |
| 7 | EXC-G4-1 | 7-25-19 | 0940 | " | " | | | | | | | X | | | | | | | | |
| 8 | EXC-G5-1 | " | 1010 | " | " | | | | | | | X | | | | | | | | |
| 9 | EXC-G7-B-1 | ~~7-26-19~~ | 0830 | " | " | | | | | | | X | | | | | | | | |
| 10 | EXC-H2-1 | " | 1106 | " | " | | | | | | | X | | | | | | | | |
| 11 | EXC-H3-1 | " | 1130 | " | " | | | | | | | X | | | | | | | | |
| 12 | EXC-H5C-5 | " | — | " | " | | | | | | | X | | | | | | | | |
| 13 | EXC-H7B-1.5 | " | 1520 | " | " | | | | | | | X | | | | | | | | |
| 14 | EXC-H7-8 | " | 1420 | " | " | | | | | | | X | | | | | | | | |
| 15 | EXC-H6-6 | " | 1450 | " | " | | | | | | | X | | | | | | | | |
| 16 | Ditch-5B-1 | " | 1545 | " | " | | | | | | | X | | | | | | | | |
| 17 | EXC-F2B-1.5 | " | 1555 | " | " | | | | | | | X | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| [signature] | 7-29-19 1452 | Kayla Peto | 7/29/19 1452 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

Distribution: White - Lab, Yellow - File, Pink - Originator

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

## Chain of Custody Record

1907372

www.LibbyEnvironmental.com

Date: 7-29-19 Page: 2 of 2

Project Manager: Sherry Chilcutt

Project Name: Prairie Pit

Location: City, State: WA

Collector: Date of Collection: 7-26-19

Email: Libbyenv@Gmail.com

Client: Libby Environmental, Inc

Address:

City: State: Zip:

Phone: Fax:

Client Project #



| Sample Number | Depth | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270+Naphthalene | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | | | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 EXC-H1-1 | — | 1400 | Soil | Jar | | | | | | | X | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | |
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| 15 | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| [signature] | 7-29-19 1452 | Kayla Pet | 7/29/19 1452 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR (48HR) 5-DAY

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

Distribution: White - Lab, Yellow - File, Pink - Originator

# Libby Environmental, Inc.

# Chain of Custody Record

1907372

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Page: 1 of 2

Client: Libby Environmental, Inc
Address: See above
City: State: Zip:
Phone: Fax:
Client Project #

Date: 7/29/19
Project Manager: Sherry Chilcott
Project Name: Prairie Pit
Location: City, State: WA
Collector: Date of Collection: 7/23-7/26
Email: LibbyEnv@gmail.com



| Sample Number | Date / ~~Depth~~ | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270 +Naph | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | | | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 TP-L-0 | 7-23-19 | 1015 | Soil | 4oz Jar | | | | | | X | X | | | | | | | | |
| 2 Ditch-6-0 | " | 1516 | " | " | | | | | | X | X | | | | | | | | |
| 3 EXC-E1-4 | " | 1035 | " | " | | | | | | X | X | | | | | | | | |
| 4 ~~EXC~~-F1-0 | " | 1400 | " | " | | | | | | X | X | | | | | | | | |
| 5 EXC-G1-1 | 7-24-19 | 1210 | " | " | | | | | | X | X | | | | | | | | |
| 6 EXC-G3-2.5 | " | 1230 | " | " | | | | | | X | X | | | | | | | | |
| 7 EXC-G4-1 | 7-25-19 | 0940 | " | " | | | | | | X | X | | | | | | | | |
| 8 EXC-G5-1 | " | 1010 | " | " | | | | | | X | X | | | | | | | | |
| 9 EXC-G7-B-1 | ~~7-26-19~~ | 0830 | " | " | | | | | | X | X | | | | | | | | |
| 10 EXC-H2-1 | " | 1106 | " | " | | | | | | X | X | | | | | | | | |
| 11 EXC-H3-1 | " | 1130 | " | " | | | | | | X | X | | | | | | | | |
| 12 EXC-H5C-5 | " | — | " | " | | | | | | X | X | | | | | | | | |
| 13 EXC-HB-1.5 | " | 1520 | " | " | | | | | | X | X | | | | | | | | |
| 14 EXC-47-8 | " | 1420 | " | " | | | | | | X | X | | | | | | | | |
| 15 EXC-H6-6 | " | 1450 | " | " | | | | | | X | X | | | | | | | | |
| 16 Ditch-5B-1 | " | 1545 | " | " | | | | | | X | X | | | | | | | | |
| 17 EXC-F2B-1.5 | " | 1555 | " | " | | | | | | X | X | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| [signature] | 7-29-19 1452 | Kayla Peter | 7/29/19 1452 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

## Chain of Custody Record

1907372

www.LibbyEnvironmental.com

Date: 7-29-19 Page: 2 of 2

Client: Libby Environmental, Inc
Address:
City: State: Zip:
Phone: Fax:
Client Project #

Project Manager: Sherry Chilcutt
Project Name: Prairie Pit
Location: City, State: WA
Collector: Date of Collection: 7-26-19
Email: Libbyenv@Gmail.com

| | Sample Number | Depth | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270+Naphthalene | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | | | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | EXC-~~HI~~-1 | — | 1400 | Soil | Jar | | | | | | | X | | | | | | | | edit per KE. 7/30/19 cej |
| 2 | H4 | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | |
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| 16 | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| [signature] | 7-29-19 1452 | Kayla Pet | 7/29/19 1452 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR (48HR) 5-DAY

LEGAL ACTION CLAUSE: In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.

Distribution: White - Lab, Yellow - File, Pink - Originator

# Libby Environmental, Inc.

# Chain of Custody Record

1907372

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 7/29/19 Page: 1 of 2

Client: Libby Environmental, Inc
Address: See above
City: State: Zip:
Phone: Fax:
Client Project #

Project Manager: Sherry Chilcutt
Project Name: Prairie Pit
Location: City, State: WA
Collector: Date of Collection: 7/23-7/26
Email: LibbyEnv@Gmail.com



| Sample Number | Date / Depth | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270 + Naphthalene | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 TP-L-0 | 7-23-19 | 1015 | Soil | 4oz Jar | | | | | | | X | | | | | | |
| 2 Ditch-6-0 | " | 1516 | " | " | | | | | | | X | | | | | | |
| 3 EXC-E1-4 | " | 1035 | " | " | | | | | | | X | | | | | | |
| 4 EXC-F1-0 | " | 1400 | " | " | | | | | | | X | | | | | | |
| 5 EXC-G1-1 | 7-24-19 | 1210 | " | " | | | | | | | X | | | | | | |
| 6 EXC-G3-2.5 | " | 1230 | " | " | | | | | | | X | | | | | | |
| 7 EXC-G4-1 | 7-25-19 | 0940 | " | " | | | | | | | X | | | | | | |
| 8 EXC-G5-1 | " | 1010 | " | " | | | | | | | X | | | | | | |
| 9 EXC-H7-B-1 | ~~7-26-19~~ | 0830 | " | " | | | | | | | X | | | | | | |
| 10 EXC-H2-1 | " | 1106 | " | " | | | | | | | X | | | | | | |
| 11 EXC-H3-1 | " | 1130 | " | " | | | | | | | X | | | | | | |
| 12 EXC-H5C-5 | " | — | " | " | | | | | | | X | | | | | | |
| 13 EXC-HTB-1.5 | " | 1520 | " | " | | | | | | | X | | | | | | |
| 14 EXC-~~H7~~-8 | " | 1420 | " | " | | | | | | | X | | | | | | Sample ID: EXC-H7-8 |
| 15 EXC-H6-6 | " | 1450 | " | " | | | | | | | X | | | | | | |
| 16 Ditch-5B-1 | " | 1545 | " | " | | | | | | | X | | | | | | |
| 17 EXC-F2B-1.5 | " | 1555 | " | " | | | | | | | X | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| [signature] | 7-29-19 1452 | Kayla Peto | 7/29/19 1452 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks: edits per EB 8/2/19 pmm

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

# Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

## Chain of Custody Record

1907372

www.LibbyEnvironmental.com

Date: 7-29-19 Page: 2 of 2

Project Manager: Sherry Chilcutt

Project Name: Prairie Pit

Location: City, State: WA

Collector: Date of Collection: 7-26-19

Email: Libbyenv@Gmail.com

Client: Libby Environmental, Inc

Address:

City: State: Zip:

Phone: Fax:

Client Project #

| | Sample Number | Depth | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270+Naphths | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | | | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | EXC-~~H1~~-1 H4 | — | 1400 | Soil | Jar | | | | | | | X | | | | | | | | edit per KE 7/30/19 cej |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | |
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| 17 | | | | | | | | | | | | | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| [signature] | 7-29-19 1452 | Kayla Pet | 7/29/19 1452 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR (48HR) 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

**SPECTRA Laboratories** ...Where experience matters

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

08/01/2019

Libby Environmental, Inc.
3322 South Bay Road NE
Olympia, WA 98506

Project: Prairie Pit
Date Received: 07/29/2019
Spectra Project: 2019070878
Rush

| Client ID | Spectra # | Analyte | Result | Units | Method | Matrix | Date Sampled |
|---|---|---|---|---|---|---|---|
| TP-L-0 | 1 | Total Nickel | 2.4 | mg/Kg | SW846 6010D | Soil | 07/23/2019 |
| Ditch-6-0 | 2 | Total Nickel | 8.4 | mg/Kg | SW846 6010D | Soil | 07/23/2019 |
| Exc-E1-4 | 3 | Total Nickel | 6.5 | mg/Kg | SW846 6010D | Soil | 07/23/2019 |
| Exc-F1-0 | 4 | Total Nickel | 6.4 | mg/Kg | SW846 6010D | Soil | 07/23/2019 |
| Exc-G1-1 | 5 | Total Nickel | 11.1 | mg/Kg | SW846 6010D | Soil | 07/24/2019 |
| Exc-G3-2.5 | 6 | Total Nickel | 10.6 | mg/Kg | SW846 6010D | Soil | 07/24/2019 |
| Exc-G4-1 | 7 | Total Nickel | 2.1 | mg/Kg | SW846 6010D | Soil | 07/25/2019 |
| Exc-G5-1 | 8 | Total Nickel | 15.8 | mg/Kg | SW846 6010D | Soil | 07/25/2019 |
| Exc-G7-B1 | 9 | Total Nickel | 14.4 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |
| Exc-H2-1 | 10 | Total Nickel | 8.8 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |
| Exc-H3-1 | 11 | Total Nickel | 9.7 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |
| Exc-H5C-5 | 12 | Total Nickel | 10.6 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |
| Exc-H1B-1.5 | 13 | Total Nickel | 14.4 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |
| Exc-H7-8 | 14 | Total Nickel | 10.7 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

a8/jac

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08/01/2019

Libby Environmental, Inc.
3322 South Bay Road NE
Olympia, WA 98506

Project: Prairie Pit
Date Received: 07/29/2019
Spectra Project: 2019070878
Rush

| Client ID | Spectra # | Analyte | Result | Units | Method | Matrix | Date Sampled |
|---|---|---|---|---|---|---|---|
| Exc-H6-6 | 15 | Total Nickel | 13.7 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |
| Ditch-5B-1 | 16 | Total Nickel | 10.4 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |
| Exc-H4-1 | 17 | Total Nickel | 11.5 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |
| Exc-F2B-1.5 | 18 | Total Nickel | 4.1 | mg/Kg | SW846 6010D | Soil | 07/26/2019 |

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

a8/jac

**SPECTRA Laboratories** ...Where experience matters

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7/31/2019

Libby Environmental
4139 Libby Rd. NE
Olympia, WA 98506

Units: mg/Kg
Spectra Project: 2019070878
Applies to Spectra #'s 1-18
Analyst: SCJ

## QUALITY CONTROL RESULTS

### ICP Metals SW846 6010D - Soil/Solid

#### Method Blank

Date Digested: 7/31/2019 Date Analyzed: 7/31/2019

| Element | Blank Result |
|---|---|
| Nickel | < 1.5 |

#### Laboratory Control Sample (LCS)

Date Digested: 7/31/2019 Date Analyzed: 7/31/2019

| Element | Spike Added | LCS Conc. | LCS %Rec |
|---|---|---|---|
| Nickel | 200.0 | 183.8 | 91.9 |

LCS Recovery limits 80-120%

#### Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Digested: 7/31/2019 Date Analyzed: 7/31/2019
Sample Spiked: 2019070896-1

| Element | Sample Conc. | Spike Conc. | MS Conc. | MS %Rec | MSD Conc | MSD %Rec | RPD |
|---|---|---|---|---|---|---|---|
| Nickel | 118.4 | 200.0 | 303.5 | 92.6 | 307.9 | 94.8 | 2.3 |

Comment:
Recovery Limits 75-125%
RPD Limit 20

SPECTRA LABORATORIES

Jeffrey Cooper
Laboratory Manager

# Libby Environmental, Inc. 729070878 Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 7/29/19 Page: 1 of 2

Client: Libby Environmental, Inc
Address: see above
City: State: Zip:
Phone: Fax:
Client Project #

Project Manager: Sherry Gilcott
Project Name: Prairie Pit
Location: City, State: WA
Collector: Date of Collection: 7/22/19 - 7/26/19
Email: Libbyenv@gmail.com

| Sample Number | Date / Depth | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270 | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | NJ Total | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 TP-L-0 | 7-23-19 | 1530 | Soil | Jar | | | | | | | | | | | | | | |
| 2 Ditch-6-0 | | 1510 | | | | | | | | | | | | | | | | |
| 3 EXC-H1-4 | | 1030 | | | | | | | | | | | | | | | | Jar is EL-4 |
| 4 EXC-F1-0 | | 1400 | | | | | | | | | | | | | | | | |
| 5 EXC-G1-0 | 7-24-19 | 1210 | | | | | | | | | | | | | | | | |
| 6 EXC-G3-2.5 | | 1230 | | | | | | | | | | | | | | | | |
| 7 EXC-G4-1 | 7-25-19 | 9:40 | | | | | | | | | | | | | | | | |
| 8 EXC-G5-1 | | 1010 | | | | | | | | | | | | | | | | |
| 9 EXC-G7-B1 | 7-26-19 | 830 | | | | | | | | | | | | | | | | |
| 10 EXC-H2-1 | | 1100 | | | | | | | | | | | | | | | | |
| 11 EXC-H3-1 | | 1130 | | | | | | | | | | | | | | | | |
| 12 EXC-H5-5 | | — | | | | | | | | | | | | | | | | |
| 13 EXC-H1B-1.5 | | 1520 | | | | | | | | | | | | | | | | |
| 14 EXC-H7-8 | | 1420 | | | | | | | | | | | | | | | | Jar is H7-8 |
| 15 EXC-H6-6 | | 1450 | | | | | | | | | | | | | | | | |
| 16 Ditch-5B-1 | | 1545 | | | | | | | | | | | | | | | | |
| 17 EXC-H1-1 | | 1400 | | | | | | | | | | | | | | | | Jar is H4-1 |

COPY

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| | 7/29/19 1639 | Spectra | 7-29-19 1639 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

# Libby Environmental, Inc. 2190708 78 Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Client: Libby Environmental, Inc
Address: see above
City: State: Zip:
Phone: Fax:
Client Project #

Date: 7/29/19 Page: 1 of 2
Project Manager: Sherry Chilcott
Project Name: Prairie Pit
Location: City, State: WA
Collector: Date of Collection: 7/22/19 - 7/26/19
Email: Libbyenv@gmail.com

| | Sample Number | Date / Depth | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270 | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | NJ TPH | | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TP-L-0 | 7-23-19 | 1530 | Soil | Jar | | | | | | | | | | | | X | | | |
| 2 | Ditch-6-0 | | 1510 | | | | | | | | | | | | | | | | | |
| 3 | EXC-E1-4 | | 1030 | | | | | | | | | | | | | | | | | |
| 4 | EXC-F1-0 | | 1400 | | | | | | | | | | | | | | | | | |
| 5 | EXC-G1-0 | 7-24-19 | 1210 | | | | | | | | | | | | | | | | | |
| 6 | EXC-G3-2.5 | | 1230 | | | | | | | | | | | | | | | | | |
| 7 | EXC-G4-1 | 7-25-19 | 9:40 | | | | | | | | | | | | | | | | | |
| 8 | EXC-G5-1 | | 1010 | | | | | | | | | | | | | | | | | |
| 9 | EXC-G7-B1 | 7-26-19 | 830 | | | | | | | | | | | | | | | | | |
| 10 | EXC-H2-1 | | 1100 | | | | | | | | | | | | | | | | | |
| 11 | EXC-H3-1 | | 1130 | | | | | | | | | | | | | | | | | |
| 12 | EXC-H5C-5 | | | | | | | | | | | | | | | | | | | |
| 13 | EXC-H1B-1.5 | | 1520 | | | | | | | | | | | | | | | | | |
| 14 | EXC-H7-8 | | 1420 | | | | | | | | | | | | | | | | | |
| 15 | EXC-H6-6 | | 1450 | | | | | | | | | | | | | | | | | |
| 16 | Ditch-5B-1 | | 1545 | | | | | | | | | | | | | | | | | |
| 17 | EXC-H1-1 | | 1400 | | | | | | | | | | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| | 7/29/19 1639 | Spectra | 7.29.19 1639 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

# Libby Environmental, Inc. 201907087S Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 7-29-19 Page: 2 of 2

Client: Libby Environmental, Inc
Address: See above
City: State: Zip:
Phone: Fax:
Client Project #

Project Manager: Sherry Chilcutt
Project Name: PointeFit
Location: City, State: WA
Collector: Date of Collection: 7/22/19 - 7/26/19
Email: Libbyenv@Gmail.com

| Sample Number | Date / Depth | Time | Sample Type | Container Type | VOC 8260 | NWTPH-Gx | BTEX 8021 | NWTPH-HCID | NWTPH-Dx | NWTPH-Dx/Dx | c PAH 8270 | PAH 8270 | Semi Vol 8270 | PCB 8082 | MTCA 5 Metals | RCRA 8 Metals | Ni Total | | Field Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 EXC-F2B-1.5 | ~~7-26~~ | 1555 | Soil | | | | | | | | | | | | | X | | | |
| 2 | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | |

| Relinquished by: | Date / Time | Received by: | Date / Time |
|---|---|---|---|
| [signature] | 7/29/19 1639 | [signature] Spectra | 7.29.19 1639 |
| Relinquished by: | Date / Time | Received by: | Date / Time |
| Relinquished by: | Date / Time | Received by: | Date / Time |

**Sample Receipt**

| | | |
|---|---|---|
| Good Condition? | Y | N |
| Cooler Temp. | | °C |
| Sample Temp. | | °C |
| Total Number of Containers | | |

Remarks:

TAT: 24HR / 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

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07/24/2019

Herrera Environmental
2200 6th Ave
Ste 1100
Seattle, WA 98121

| | |
|---|---|
| P.O.#: | 16-06310-011 |
| Project: | Prairie Pit |
| Client ID: | TP9-TCLP-5 |
| Sample Matrix: | Solid |
| Date Sampled: | 07/22/2019 |
| Date Received: | 07/22/2019 |
| Spectra Project: | 2019070636 |
| Spectra Number: | 1 |
| | Rush |

| Analyte | Result | Units | Method |
|---|---|---|---|
| TCLP Lead | 5.95 | mg/L | EPA 1311/6010D |

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

a6/scj

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7/24/2019

Herrera Environmental
2200 6th Ave.
Ste 1100
Seattle, WA 98121

Units: mg/L
Spectra Project: 2019070636
Applies to Spectra #'s 1
Analyst: SCJ

## QUALITY CONTROL RESULTS

### ICP Metals SW846 6010C - TCLP Extract

#### Method Blank

Date Digested: 7/24/2019 Date Analyzed: 7/24/2019

| Element | Result |
|---|---|
| Lead | < 0.025 |

#### Laboratory Control Sample (LCS)

Date Digested: 7/24/2019 Date Analyzed: 7/24/2019

| Element | Spike Added | LCS Conc. | LCS %Rec |
|---|---|---|---|
| Lead | 1.0 | 0.978 | 97.8 |

LCS Recovery limits 80-120%

#### Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Digested: 7/24/2019 Date Analyzed: 7/24/2019
Sample Spiked: 2019070636-1

| Element | Sample Conc. | Spike Conc. | MS Conc. | MS %Rec | MSD Conc | MSD %Rec | RPD |
|---|---|---|---|---|---|---|---|
| Lead | 5.953 | 1.0 | 6.844 | 89.1 | 6.965 | 101.2 | 12.7 |

Recovery Limits 75-125%
RPD Limit 20
Comment:

Spectra Laboratories

Jeffrey Cooper
Laboratory Manager

# SPECTRA Laboratories

2221 Ross Way, Tacoma, WA 98421
(253) 272-4850 Fax (253) 572-9838
www.spectra-lab.com info@spectra-lab.com

SPECIAL INSTRUCTIONS/COMMENTS:
TCLP Lead - rush 48 Hr. TAT.

# CHAIN OF CUSTODY

SPECTRA PROJECT #: 20190706J4

Return Samples: Y (N) Page 1 of 1 STANDARD ☐ RUSH ☑

CLIENT: Herrera
PROJECT: Prairie Pit
CONTACT: George Iffner
SAMPLED BY: George Iffner
PHONE: 206-787-3240 FAX:
e-MAIL: giffner@herrerainc.com Prefer FAX ☐ or e-MAIL ☑
PURCHASE ORDER # 16-06310-011

ADDRESS:
ADDRESS CHANGE ☐

| | SAMPLE ID | DATE SAMPLED | TIME SAMPLED | MATRIX | NUMBER OF CONTAINERS | HYDROCARBONS: NWTPH-HCID | BTEX | BTEX/NWTPH-G | NWTPH-G | NWTPH-Dx | 1664 SGT-HEM (TPH) | 1664 HEM (FOG) | ORGANICS: 8260/624 VOA | 8260 CHLOR SOLVENTS | 8270-625 SEMI VOA | 8270 PAH/PNA | 8082/608 PCB | METALS: TOTAL METALS RCRA 8 | TOTAL METALS (SPECIFY) | TCLP METALS RCRA 8 | TCLP METALS (SPECIFY) Pb. | OTHER: PH 9040/9045 | TX/TOX/EOX | TURBIDITY | FLASH POINT | BOD | SOLIDS (SPECIFY) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TP9-TCLP-5 | 7/22/19 | 08:30 | Soil | 1 | | | | | | | | | | | | | | | | X | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

LAB USE ONLY

| | SIGNATURE | PRINTED NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|---|
| RELINQUISHED BY | George Iffner | George Iffner | Herrera | 7/22/19 | 09:28 |
| RECEIVED BY | Kaitlyn Reiley | Kaitlyn Reiley | Spectra | 7.22.19 | 0928 |
| RELINQUISHED BY | | | | | |
| RECEIVED BY | | | | | |

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Laboratories, LLC*

**SPECTRA** Laboratories ...Where experience matters

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07/25/2019

Herrera Environmental
2200 6th Ave
Ste 1100
Seattle, WA 98121

Project: Prairie Pit
Sample Matrix: Soil
Date Sampled: 07/23/2019
Date Received: 07/23/2019
Spectra Project: 2019070681
Rush

| Client ID | Spectra # | Analyte | Result | Units | Method |
|---|---|---|---|---|---|
| EXC-E-SP1 | 1 | TCLP Lead | 0.104 | mg/L | EPA 1311/6010D |
| EXC-E-SP2 | 2 | TCLP Lead | 0.585 | mg/L | EPA 1311/6010D |
| TP-G-3 | 3 | TCLP Lead | 1.36 | mg/L | EPA 1311/6010D |
| TP-H-3 | 4 | TCLP Lead | 2.98 | mg/L | EPA 1311/6010D |
| EXC-F-SP1 | 5 | TCLP Lead | 5.30 | mg/L | EPA 1311/6010D |

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

ajr/scj

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7/25/2019

Herrera Environmental
2200 6th Ave.
Ste 1100
Seattle, WA 98121

Units: mg/L
Spectra Project: 2019070681
Applies to Spectra #'s 1-5
Analyst: SCJ

## QUALITY CONTROL RESULTS

### ICP Metals EPA 1311/6010D - TCLP Extract

**Method Blank**

Date Digested: 7/25/2019 Date Analyzed: 7/25/2019

| Element | Result |
|---|---|
| Lead | < 0.025 |

**Laboratory Control Sample (LCS)**

Date Digested: 7/25/2019 Date Analyzed: 7/25/2019

| Element | Spike Added | LCS Conc. | LCS %Rec |
|---|---|---|---|
| Lead | 1.0 | 0.988 | 98.8 |

LCS Recovery limits 80-120%

**Matrix Spike/Matrix Spike Duplicate (MS/MSD)**

Date Digested: 7/24/2019 Date Analyzed: 7/24/2019
Sample Spiked: 2019070636-1

| Element | Sample Conc. | Spike Conc. | MS Conc. | MS %Rec | MSD Conc | MSD %Rec | RPD |
|---|---|---|---|---|---|---|---|
| Lead | 5.953 | 1.0 | 6.844 | 89.1 | 6.965 | 101.2 | 12.7 |

Recovery Limits 75-125%
RPD Limit 20
Comment:

Spectra Laboratories

Jeffrey Cooper
Laboratory Manager

# SPECTRA Laboratories

2221 Ross Way, Tacoma, WA 98421
(253) 272-4850 Fax (253) 572-9838
www.spectra-lab.com info@spectra-lab.com

SPECIAL INSTRUCTIONS/COMMENTS:

TCLP Lead - Rush 48 hr. TAT

# CHAIN OF CUSTODY

SPECTRA PROJECT # 2019070681

Return Samples: Y (N) Page 1 of 1 STANDARD ☐ RUSH ☑

CLIENT: Herrera ADDRESS: ADDRESS CHANGE ☐

PROJECT: Prairie pit

CONTACT: George Ifther

SAMPLED BY: George Ifther

PHONE: 206-787-8210 FAX:

e-MAIL: gifther@herrera.com Prefer FAX ☐ or e-MAIL ☐

PURCHASE ORDER #

| | SAMPLE ID | DATE SAMPLED | TIME SAMPLED | MATRIX | NUMBER OF CONTAINERS | HYDROCARBONS: NWTPH-HCID | BTEX | BTEX/NWTPH-G | NWTPH-G | NWTPH-Dx | 1664 SGT-HEM (TPH) | 1664 HEM (FOG) | ORGANICS: 8260/624 VOA | 8260 CHLOR SOLVENTS | 8270-625 SEMI VOA | 8270 PAH/PNA | 8082/608 PCB | METALS: TOTAL METALS RCRA 8 | TOTAL METALS (SPECIFY) | TCLP METALS RCRA 8 | TCLP METALS (SPECIFY) pb | OTHER: PH 9040/9045 | TX/TOX/EOX | TURBIDITY | FLASH POINT | BOD | SOLIDS (SPECIFY) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | EXC-E-SP1 | 7-23-19 | 9:45 | SOH | 1 | | | | | | | | | | | | | | | | X | | | | | | |
| 2 | EXC-E-SP2 | 7-23-19 | 10:20 | SOH | 1 | | | | | | | | | | | | | | | | X | | | | | | |
| 3 | TP-G-3 | 7-23-19 | 10:30 | SOH | 1 | | | | | | | | | | | | | | | | X | | | | | | |
| 4 | TP-H-3 | 7-23-19 | 11:00 | SOH | 1 | | | | | | | | | | | | | | | | X | | | | | | |
| 5 | EXC-F-SP1 | 7-23-19 | 11:45 | SOH | 1 | | | | | | | | | | | | | | | | X | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

LAB USE ONLY

| | SIGNATURE | PRINTED NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|---|
| RELINQUISHED BY | Isaac Herring | Isaac Herring | LANGSETH | 7-23-19 | 12:41 |
| RECEIVED BY | | Kaitlyn Reiley | Spectra | 7.23.19 | 1241 |
| RELINQUISHED BY | | | | | |
| RECEIVED BY | | | | | |

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Laboratories, LLC*

**SPECTRA** Laboratories ...Where experience matters

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08/01/2019

Herrera Environmental
2200 6th Ave
Ste 1100
Seattle, WA 98121

P.O.#: 16-06310-011
Project: Prairie Pit
Sample Matrix: Soil
Date Sampled: 07/30/2019
Date Received: 07/30/2019
Spectra Project: 2019070897
Rush

| Client ID | Spectra # | Analyte | Result | Units | Method |
|---|---|---|---|---|---|
| Exc-H/TP9-Comp | 1 | TCLP Lead | 0.073 | mg/L | EPA 1311/6010D |
| Exc-F-Comp | 2 | TCLP Lead | < 0.025 | mg/L | EPA 1311/6010D |

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a7 scj

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8/1/2019

Herrera Environmental
2200 6th Ave.
Ste 1100
Seattle, WA 98121

Units: mg/L
Spectra Project: 2019070897
Applies to Spectra #'s 1-2
Analyst: SCJ

## QUALITY CONTROL RESULTS

### ICP Metals EPA 1311/6010D - TCLP Extract

#### Method Blank

Date Digested: 8/1/2019 Date Analyzed: 8/1/2019

| Element | Result |
|---|---|
| Lead | < 0.025 |

#### Laboratory Control Sample (LCS)

Date Digested: 8/1/2019 Date Analyzed: 8/1/2019

| Element | Spike Added | LCS Conc. | LCS %Rec |
|---|---|---|---|
| Lead | 1.0 | 1.031 | 103.1 |

LCS Recovery limits 80-120%

#### Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Digested: 7/29/2019 Date Analyzed: 7/29/2019
Sample Spiked: 2019070783-1

| Element | Sample Conc. | Spike Conc. | MS Conc. | MS %Rec | MSD Conc | MSD %Rec | RPD |
|---|---|---|---|---|---|---|---|
| Lead | 0.000 | 1.0 | 0.824 | 82.4 | 0.797 | 79.7 | 3.3 |

Recovery Limits 75-125%
RPD Limit 20
Comment:

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Jeffrey Cooper
Laboratory Manager

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www.spectra-lab.com info@spectra-lab.com

SPECIAL INSTRUCTIONS/COMMENTS:

# CHAIN OF CUSTODY

SPECTRA PROJECT # 1219070899

Return Samples: Y (N) Page 1 of 1 STANDARD ☐ RUSH ☑

CLIENT: HERRERA ENV. CONS. ADDRESS: ADDRESS CHANGE ☐

PROJECT: PRAIRIE PIT

CONTACT: GEORGE IFTNER

SAMPLED BY: GEORGE IFTNER

PHONE: 206-787-8210 FAX: —

e-MAIL: giftner@herreraine.com Prefer FAX ☐ or e-MAIL ☑

PURCHASE ORDER # 16-06310-011

| | SAMPLE ID | DATE SAMPLED | TIME SAMPLED | MATRIX | NUMBER OF CONTAINERS | HYDROCARBONS: NWTPH-HCID | BTEX | BTEX/NWTPH-G | NWTPH-G | NWTPH-Dx | 1664 SGT-HEM (TPH) | 1664 HEM (FOG) | ORGANICS: 8260/624 VOA | 8260 CHLOR SOLVENTS | 8270-625 SEMI VOA | 8270 PAH/PNA | 8082/608 PCB | METALS: TOTAL METALS RCRA 8 | TOTAL METALS (SPECIFY) | TCLP METALS RCRA 8 | TCLP METALS (SPECIFY) Lead | OTHER: PH 9040/9045 | TX/TOX/EOX | TURBIDITY | FLASH POINT | BOD | SOLIDS (SPECIFY) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | EXC-H/TP9-COMP | 7/30/19 | 14:20 | Soil | 1 | | | | | | | | | | | | | | | | X | | | | | | |
| 2 | EXC-F-COMP | ↓ | 14:30 | Soil | 1 | | | | | | | | | | | | | | | | X | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

LAB USE ONLY

| | SIGNATURE | PRINTED NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|---|
| RELINQUISHED BY | George Iftner | GEORGE IFTNER | HERRERA | 7/30/19 | 15:30 |
| RECEIVED BY | Lori Hamilton | Lori Hamilton | Spectra | 7-30-19 | 1530 |
| RELINQUISHED BY | | | | | |
| RECEIVED BY | | | | | |

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Laboratories, LLC*

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08/07/2019

Herrera Environmental
2200 6th Ave
Ste 1100
Seattle, WA 98121

P.O.#: 16-06310-011
Project: Prairie Pit
Sample Matrix: Soil
Date Sampled: 07/30/2019
Date Received: 08/02/2019
Spectra Project: 2019080063

| Client ID | Spectra # | Analyte | Result | Units | Method |
|---|---|---|---|---|---|
| MW-1 | 1 | Total Lead | < 2.5 | mg/Kg | SW846 6010D |
| MW-2 | 2 | Total Lead | < 2.5 | mg/Kg | SW846 6010D |
| MW-3 | 3 | Total Lead | < 2.5 | mg/Kg | SW846 6010D |

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Jeffrey Cooper, Laboratory Manager

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8/7/2019

Herrerea Environmental
2200 6th Ave Ste 1100
Seattle, WA 98121

Units: mg/Kg
Spectra Project: 2019080063
Applies to Spectra #'s: 1-3
Analyst: SCJ

## QUALITY CONTROL RESULTS

### ICP Metals SW846 6010D - Soil/Solid

#### Method Blank

Date Digested: 8/7/2019 Date Analyzed: 8/7/2019

| Element | Blank Result |
|---|---|
| Lead | < 2.5 |

#### Laboratory Control Sample (LCS)

Date Digested: 8/7/2019 Date Analyzed: 8/7/2019

| Element | Spike Added | LCS Conc. | LCS %Rec |
|---|---|---|---|
| Lead | 200.0 | 194.3 | 97.2 |

LCS Recovery limits 80-120%

#### Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Digested: 8/7/2019 Date Analyzed: 8/7/2019
Sample Spiked: 2019080063-3

| Element | Sample Conc. | Spike Conc. | MS Conc. | MS %Rec | MSD Conc | MSD %Rec | RPD |
|---|---|---|---|---|---|---|---|
| Lead | 0.0 | 200.0 | 178.1 | 89.1 | 177.4 | 88.7 | 0.4 |

Comment:
Recovery Limits 75-125%
RPD Limit 20

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Jeffrey Cooper
Laboratory Manager

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SPECIAL INSTRUCTIONS/COMMENTS:

# CHAIN OF CUSTODY

SPECTRA PROJECT # 1908006-23

Return Samples: Y (N) Page 1 of 1 STANDARD ✓ RUSH ☐

CLIENT: Herrera ADDRESS: 2200 6th Ave. Seattle, WA 98121 ADDRESS CHANGE ☐

PROJECT: Prairie Pit

CONTACT: George Iftner

SAMPLED BY: George Iftner

PHONE: 206-787-8210 FAX:

e-MAIL: giftner@herrerainc.com Prefer FAX ☐ or e-MAIL ✓

PURCHASE ORDER # 16-06310-011

| | SAMPLE ID | DATE SAMPLED | TIME SAMPLED | MATRIX | NUMBER OF CONTAINERS | HYDROCARBONS: NWTPH-HCID | BTEX | BTEX/NWTPH-G | NWTPH-G | NWTPH-Dx | 1664 SGT-HEM (TPH) | 1664 HEM (FOG) | ORGANICS: 8260/624 VOA | 8260 CHLOR SOLVENTS | 8270-625 SEMI VOA | 8270 PAH/PNA | 8082/608 PCB | METALS: TOTAL METALS RCRA 8 | TOTAL METALS (SPECIFY) Pb | TCLP METALS RCRA 8 | TCLP METALS (SPECIFY) | OTHER: PH 9040/9045 | TX/TOX/EOX | TURBIDITY | FLASH POINT | BOD | SOLIDS (SPECIFY) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-1 | 7/30/19 | 17:20 | Soil | 1 | | | | | | | | | | | | | | X | | | | | | | | | |
| 2 | MW-2 | 7/31/19 | 13:45 | ↓ | 1 | | | | | | | | | | | | | | X | | | | | | | | | |
| 3 | MW-3 | 8/1/19 | 15:00 | ↓ | 1 | | | | | | | | | | | | | | X | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

LAB USE ONLY

| | SIGNATURE | PRINTED NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|---|
| RELINQUISHED BY | George Iftner | George Iftner | Herrera | 8/2/19 | 15:22 |
| RECEIVED BY | Lori Hamilton | Lori Hamilton | Spectra | 8-2-19 | 1522 |
| RELINQUISHED BY | | | | | |
| RECEIVED BY | | | | | |

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08/20/2019

Herrera Environmental
2200 6th Ave
Ste 1100
Seattle, WA 98121

P.O.#: 16-06310-011
Project: Prairie Pit
Client ID: EXC-G2B-1
Sample Matrix: Soil
Date Sampled: 08/02/2019
Date Received: 08/02/2019
Spectra Project: 2019080052
Spectra Number: 1
Rush

| Analyte | Result | Units | Method |
|---|---|---|---|
| Benzo(a)Anthracene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Benzo(a)Pyrene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Benzo(b)Fluoranthene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Benzo(k)Fluoranthene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Chrysene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Dibenz(a,h)Anthracene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Indeno(1,2,3-cd)Pyrene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Naphthalene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Diesel | <10 | mg/Kg | NWTPH-D |
| Oil | <50 | mg/Kg | NWTPH-D |
| Total Cadmium | < 0.3 | mg/Kg | SW846 6010D |
| Total Chromium | 18.7 | mg/Kg | SW846 6010D |
| Total Lead | 12.8 | mg/Kg | SW846 6010D |
| Total Nickel | 27.4 | mg/Kg | SW846 6010D |
| Total Zinc | 62.6 | mg/Kg | SW846 6010D |

| Surrogate | % Recovery | Method |
|---|---|---|
| p-Terphenyl | 87 | NWTPH-D |
| 2-Fluorobiphenyl--SIM | 89 | 8270D SIM |
| Nitrobenzene-d5--SIM | 84 | 8270D SIM |
| p-Terphenyl-d14--SIM | 98 | 8270D SIM |

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08/20/2019

Herrera Environmental
2200 6th Ave
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Seattle, WA 98121

P.O.#: 16-06310-011
Project: Prairie Pit
Client ID: EXC-G6B-3
Sample Matrix: Soil
Date Sampled: 08/02/2019
Date Received: 08/02/2019
Spectra Project: 2019080052
Spectra Number: 2
Rush

| Analyte | Result | Units | Method |
|---|---|---|---|
| Benzo(a)Anthracene | <0.70** | mg/Kg | EPA 625 |
| Benzo(a)Pyrene | <0.70** | mg/Kg | EPA 625 |
| Benzo(b)Fluoranthene | <0.70** | mg/Kg | EPA 625 |
| Benzo(k)Fluoranthene | <0.70** | mg/Kg | EPA 625 |
| Chrysene | <0.70** | mg/Kg | EPA 625 |
| Dibenz(a,h)Anthracene | <0.70** | mg/Kg | EPA 625 |
| Indeno(1,2,3-cd)Pyrene | <0.70** | mg/Kg | EPA 625 |
| Naphthalene | <0.70** | mg/Kg | EPA 625 |
| Diesel | <100 | mg/Kg | NWTPH-D |
| Oil | 1240* | mg/Kg | NWTPH-D |
| Total Cadmium | 0.4 | mg/Kg | SW846 6010D |
| Total Chromium | 41 | mg/Kg | SW846 6010D |
| Total Lead | 194 | mg/Kg | SW846 6010D |
| Total Nickel | 19.3 | mg/Kg | SW846 6010D |
| Total Zinc | 51 | mg/Kg | SW846 6010D |

*Sample was taken through NWTPH cleanup procedures. **Elevated reporting limit due to sample matrix interference.
***SIM surrogates diluted out of range in scan mode.

| Surrogate | % Recovery | Method |
|---|---|---|
| p-Terphenyl | 72 | NWTPH-D |
| 2-Fluorobiphenyl--SIM | 0*** | 8270D SIM |
| Nitrobenzene-d5--SIM | 0*** | 8270D SIM |
| p-Terphenyl-d14--SIM | 0*** | 8270D SIM |

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08/20/2019

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Seattle, WA 98121

P.O.#: 16-06310-011
Project: Prairie Pit
Client ID: EXC-H8C-5
Sample Matrix: Soil
Date Sampled: 08/02/2019
Date Received: 08/02/2019
Spectra Project: 2019080052
Spectra Number: 3
Rush

| Analyte | Result | Units | Method |
|---|---|---|---|
| Benzo(a)Anthracene | <0.70*** | mg/Kg | EPA 625 |
| Benzo(a)Pyrene | <0.70*** | mg/Kg | EPA 625 |
| Benzo(b)Fluoranthene | <0.70*** | mg/Kg | EPA 625 |
| Benzo(k)Fluoranthene | <0.70*** | mg/Kg | EPA 625 |
| Chrysene | <0.70*** | mg/Kg | EPA 625 |
| Dibenz(a,h)Anthracene | <0.70*** | mg/Kg | EPA 625 |
| Indeno(1,2,3-cd)Pyrene | <0.70*** | mg/Kg | EPA 625 |
| Naphthalene | <0.70*** | mg/Kg | EPA 625 |
| Diesel | <100 | mg/Kg | NWTPH-D |
| Oil | 2610* | mg/Kg | NWTPH-D |
| Total Cadmium | < 0.3 | mg/Kg | SW846 6010D |
| Total Chromium | 17.4 | mg/Kg | SW846 6010D |
| Total Lead | 86 | mg/Kg | SW846 6010D |
| Total Nickel | 24.3 | mg/Kg | SW846 6010D |
| Total Zinc | 154 | mg/Kg | SW846 6010D |

*Sample was taken through NWTPH cleanup procedures **No surrogate recovery due to dilution requirements.
***Elevated reporting limit due to sample matrix interference. ****SIM surrogates diluted out of range in scan mode.

| Surrogate | % Recovery | Method |
|---|---|---|
| p-Terphenyl | 0** | NWTPH-D |
| 2-Fluorobiphenyl--SIM | 0**** | 8270D SIM |
| Nitrobenzene-d5--SIM | 0**** | 8270D SIM |
| p-Terphenyl-d14--SIM | 0**** | 8270D SIM |

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Seattle, WA 98121

P.O.#: 16-06310-011
Project: Prairie Pit
Client ID: EXC-H9C-5
Sample Matrix: Soil
Date Sampled: 08/02/2019
Date Received: 08/02/2019
Spectra Project: 2019080052
Spectra Number: 4
Rush

| Analyte | Result | Units | Method |
|---|---|---|---|
| Benzo(a)Anthracene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Benzo(a)Pyrene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Benzo(b)Fluoranthene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Benzo(k)Fluoranthene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Chrysene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Dibenz(a,h)Anthracene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Indeno(1,2,3-cd)Pyrene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Naphthalene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Diesel | <10 | mg/Kg | NWTPH-D |
| Oil | 75.4* | mg/Kg | NWTPH-D |
| Total Cadmium | < 0.3 | mg/Kg | SW846 6010D |
| Total Chromium | 11.3 | mg/Kg | SW846 6010D |
| Total Lead | 15.6 | mg/Kg | SW846 6010D |
| Total Nickel | 18.9 | mg/Kg | SW846 6010D |
| Total Zinc | 42.8 | mg/Kg | SW846 6010D |
| PCB | <0.01 | mg/Kg | SW846 8082A |

*Sample was taken through NWTPH cleanup procedures

| Surrogate | % Recovery | Method |
|---|---|---|
| p-Terphenyl | 74 | NWTPH-D |
| 2-Fluorobiphenyl--SIM | 78 | 8270D SIM |
| Nitrobenzene-d5--SIM | 75 | 8270D SIM |
| p-Terphenyl-d14--SIM | 83 | 8270D SIM |

| Surrogate | % Recovery | Method |
|---|---|---|
| Decachlorobiphenyl | 75 | SW846 8082A |

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P.O.#: 16-06310-011
Project: Prairie Pit
Client ID: EXC-H10-2
Sample Matrix: Soil
Date Sampled: 08/02/2019
Date Received: 08/02/2019
Spectra Project: 2019080052
Spectra Number: 5
Rush

| Analyte | Result | Units | Method |
|---|---|---|---|
| Benzo(a)Anthracene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Benzo(a)Pyrene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Benzo(b)Fluoranthene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Benzo(k)Fluoranthene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Chrysene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Dibenz(a,h)Anthracene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Indeno(1,2,3-cd)Pyrene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Naphthalene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Diesel | <10 | mg/Kg | NWTPH-D |
| Oil | <50 | mg/Kg | NWTPH-D |
| Total Cadmium | < 0.3 | mg/Kg | SW846 6010D |
| Total Chromium | 13.4 | mg/Kg | SW846 6010D |
| Total Lead | < 2.5 | mg/Kg | SW846 6010D |
| Total Nickel | 24.8 | mg/Kg | SW846 6010D |
| Total Zinc | 37.4 | mg/Kg | SW846 6010D |

| Surrogate | % Recovery | Method |
|---|---|---|
| p-Terphenyl | 76 | NWTPH-D |
| 2-Fluorobiphenyl--SIM | 76 | 8270D SIM |
| Nitrobenzene-d5--SIM | 75 | 8270D SIM |
| p-Terphenyl-d14--SIM | 92 | 8270D SIM |

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08/20/2019

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2200 6th Ave
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Seattle, WA 98121

P.O.#: 16-06310-011
Project: Prairie Pit
Client ID: EXC-H11-1
Sample Matrix: Soil
Date Sampled: 08/02/2019
Date Received: 08/02/2019
Spectra Project: 2019080052
Spectra Number: 6
Rush

| Analyte | Result | Units | Method |
|---|---|---|---|
| Benzo(a)Anthracene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Benzo(a)Pyrene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Benzo(b)Fluoranthene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Benzo(k)Fluoranthene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Chrysene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Dibenz(a,h)Anthracene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Indeno(1,2,3-cd)Pyrene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Naphthalene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Diesel | <10 | mg/Kg | NWTPH-D |
| Oil | <50 | mg/Kg | NWTPH-D |
| Total Cadmium | < 0.3 | mg/Kg | SW846 6010D |
| Total Chromium | 11.4 | mg/Kg | SW846 6010D |
| Total Lead | 9 | mg/Kg | SW846 6010D |
| Total Nickel | 18.1 | mg/Kg | SW846 6010D |
| Total Zinc | 30.3 | mg/Kg | SW846 6010D |

| Surrogate | % Recovery | Method |
|---|---|---|
| p-Terphenyl | 75 | NWTPH-D |
| 2-Fluorobiphenyl--SIM | 78 | 8270D SIM |
| Nitrobenzene-d5--SIM | 80 | 8270D SIM |
| p-Terphenyl-d14--SIM | 80 | 8270D SIM |

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Jeffrey Cooper, Laboratory Manager

a5/dis

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08/20/2019

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2200 6th Ave
Ste 1100
Seattle, WA 98121

P.O.#: 16-06310-011
Project: Prairie Pit
Client ID: EXC-E2C-2.5
Sample Matrix: Soil
Date Sampled: 08/02/2019
Date Received: 08/02/2019
Spectra Project: 2019080052
Spectra Number: 7
Rush

| Analyte | Result | Units | Method |
|---|---|---|---|
| Benzo(a)Anthracene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Benzo(a)Pyrene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Benzo(b)Fluoranthene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Benzo(k)Fluoranthene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Chrysene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Dibenz(a,h)Anthracene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Indeno(1,2,3-cd)Pyrene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Naphthalene--SIM | <0.004 | mg/Kg | 8270D SIM |
| Diesel | <10 | mg/Kg | NWTPH-D |
| Oil | <50 | mg/Kg | NWTPH-D |
| Total Cadmium | < 0.3 | mg/Kg | SW846 6010D |
| Total Chromium | 15.6 | mg/Kg | SW846 6010D |
| Total Lead | 7.2 | mg/Kg | SW846 6010D |
| Total Nickel | 18.1 | mg/Kg | SW846 6010D |
| Total Zinc | 28.2 | mg/Kg | SW846 6010D |

| Surrogate | % Recovery | Method |
|---|---|---|
| p-Terphenyl | 80 | NWTPH-D |
| 2-Fluorobiphenyl--SIM | 59 | 8270D SIM |
| Nitrobenzene-d5--SIM | 52 | 8270D SIM |
| p-Terphenyl-d14--SIM | 82 | 8270D SIM |

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Jeffrey Cooper, Laboratory Manager

a5/djs

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08/20/2019

Herrera Environmental
2200 6th Ave
Ste 1100
Seattle, WA 98121

P.O.#: 16-06310-011
Project: Prairie Pit
Client ID: EXC-E3C-1.5
Sample Matrix: Soil
Date Sampled: 08/02/2019
Date Received: 08/02/2019
Spectra Project: 2019080052
Spectra Number: 8
Rush

| Analyte | Result | Units | Method |
|---|---|---|---|
| Benzo(a)Anthracene | <0.70** | mg/Kg | EPA 625 |
| Benzo(a)Pyrene | <0.70** | mg/Kg | EPA 625 |
| Benzo(b)Fluoranthene | <0.70** | mg/Kg | EPA 625 |
| Benzo(k)Fluoranthene | <0.70** | mg/Kg | EPA 625 |
| Chrysene | <0.70** | mg/Kg | EPA 625 |
| Dibenz(a,h)Anthracene | <0.70** | mg/Kg | EPA 625 |
| Indeno(1,2,3-cd)Pyrene | <0.70** | mg/Kg | EPA 625 |
| Naphthalene | <0.70** | mg/Kg | EPA 625 |
| Diesel | <10 | mg/Kg | NWTPH-D |
| Oil | 136* | mg/Kg | NWTPH-D |
| Total Cadmium | < 0.3 | mg/Kg | SW846 6010D |
| Total Chromium | 9.2 | mg/Kg | SW846 6010D |
| Total Lead | 246 | mg/Kg | SW846 6010D |
| Total Nickel | 17.5 | mg/Kg | SW846 6010D |
| Total Zinc | 67.7 | mg/Kg | SW846 6010D |

*Sample was taken through NWTPH cleanup procedures **Elevated reporting limit due to sample matrix interference.
***SIM surrogates diluted out of range in scan mode.

| Surrogate | % Recovery | Method |
|---|---|---|
| p-Terphenyl | 83 | NWTPH-D |
| 2-Fluorobiphenyl--SIM | 0*** | 8270D SIM |
| Nitrobenzene-d5--SIM | 0*** | 8270D SIM |
| p-Terphenyl-d14--SIM | 0*** | 8270D SIM |

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August 20, 2019

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Ste 1100
Seattle, WA 98121

Method: NWTPH-Dx
Sample Matrix: Soil
Spectra Project: 2019080052
Applies to Spectra #: 1-8
Units: mg/Kg

## HYDROCARBON ANALYSIS
## QUALITY CONTROL RESULTS

BLANK SPIKE (LCS)

Date Extracted: 8/5/2019 Date Analyzed: 8/6/2019

| Compound | Sample Result | Spike Amount Added | Spike Amount Found | Percent Recovery |
|---|---|---|---|---|
| Diesel | <10.0 | 125 | 118 | 94.4 |

METHOD BLANK

Date Extracted: 8/5/2019 Date Analyzed: 8/6/2019

| | | |
|---|---|---|
| Diesel | <10.0 | mg/Kg |
| Heavy Oil | <50.0 | mg/Kg |

Surrogate Recovery:

| | |
|---|---|
| p-terphenyl | 83% |

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August 20, 2019

Herrera Environmental
22006th Ave
Ste 1100
Seattle, WA 98121

Method: EPA Method 8082A
Sample Matrix: Soil
Units: mg/Kg
Spectra Project: 2019080052
Applies to Spectra # 4

## PCB ANALYSIS
## QUALITY CONTROL RESULTS

### MS/MSD

Spiked Sample: 2019080403-1

Date Extracted: 8/16/2019
Date Analyzed: 8/19/2019

| Compound | Sample Result | Spike Amount Added | Spike Amount Found | Percent Recovery | Dup. Spike Amount Found | Percent Recovery | RPD |
|---|---|---|---|---|---|---|---|
| AR1260 | <0.01 | 0.025 | 0.0191 | 76% | 0.0192 | 77% | 0.5 |

### BLANK SPIKE (LCS)

Date Extracted: 8/16/2019

Date Analyzed: 8/19/2019

| Compound | Sample Result | Spike Amount Added | Spike Amount Found | Percent Recovery |
|---|---|---|---|---|
| AR1260 | <0.01 | 0.025 | 0.0217 | 87% |

### METHOD BLANK

Date Extracted: 8/16/2019

Date Analyzed: 8/19/2019

| | |
|---|---|
| PCB's | <0.01 |
| Surrogate Recovery: | |
| Decachlorobiphenyl | 67% |

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

**Marie Holt** 2019080052

**From:** Marie Holt
**Sent:** Thursday, August 15, 2019 11:02 AM
**To:** George Iftner
**Cc:** Jeff Cooper
**Subject:** RE: Request for additional PCB analysis - for Herrera

Hi George,

We will get started on this and on a rush should have results by end of day Monday for you.

Let me know if further needs arise.

Thanks!

*Marie Holt*
*Customer Support and Office Manager*

**SPECTRA Laboratories**
2221 Ross Way
Tacoma, WA 98421
P (253) 272-4850
F (253) 572-9838
marieh@spectra-lab.com

---

**From:** George Iftner <giftner@herrerainc.com>
**Sent:** Thursday, August 15, 2019 10:32 AM
**To:** Marie Holt <MarieH@spectra-lab.com>
**Cc:** Jeff Cooper <jeffc@spectra-lab.com>
**Subject:** Request for additional PCB analysis - for Herrera

Hi Marie,
I'd like you to analyze one sample for PCBs:

Sample **EXC-H9C-5 – run for total PCBs**
Spectra Project: 2019080052

COC attached (ignore the yellow highlights).
TAT: 48 hour (by Monday?)

George

HERRERA

GEORGE IFTNER

**From:** George Iftner
**Sent:** Wednesday, August 07, 2019 12:30 PM
**To:** Marie Holt <MarieH@spectra-lab.com>
**Cc:** Jeff Cooper <jeffc@spectra-lab.com>
**Subject:** RE: Information - Prairie Pit

Can you send partial report of everything else that you have today?
-George

HERRERA

GEORGE IFTNER

**From:** Marie Holt [mailto:MarieH@spectra-lab.com]
**Sent:** Wednesday, August 07, 2019 9:23 AM
**To:** George Iftner <giftner@herrerainc.com>
**Cc:** Jeff Cooper <jeffc@spectra-lab.com>
**Subject:** Information - Prairie Pit

Hi George,

I want to keep you up to date on the Prairie Pit project with 8 soils.

Three of the samples have been ran twice by for PAH/SIM and are causing some issues. We plan to run these three again by scan mode, though results will not be complete today, we should have the complete project to you tomorrow. The three samples causing issues are:

EXC-G6B-3
EXC-H8C-5
EXC-E3C-1.5

Thank you for your patience, we will get the report to you as soon as possible.

2019080052

*Marie Holt*
*Customer Support and Office Manager*

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Tacoma, WA 98421

# SPECTRA Laboratories

2221 Ross Way, Tacoma, WA 98421
(253) 272-4850 Fax (253) 572-9838
www.spectra-lab.com info@spectra-lab.com

SPECIAL INSTRUCTIONS/COMMENTS: Hold for PCBs (don't run until directed)

# CHAIN OF CUSTODY

SPECTRA PROJECT # 2019080052

Return Samples: Y (N) Page 1 of 1 STANDARD ☐ RUSH ☑

CLIENT: Herrera
ADDRESS: 2200 6th Ave., Seattle, WA 98121 ADDRESS CHANGE ☐
PROJECT: Prairie Pit
CONTACT: George Ifther
SAMPLED BY: George Ifther
PHONE: 206-787-8210 FAX:
e-MAIL: gifther@herrerainc.com Prefer FAX ☐ or e-MAIL ☑
PURCHASE ORDER #16-06310-011

| SAMPLE ID | DATE SAMPLED | TIME SAMPLED | MATRIX | NUMBER OF CONTAINERS | HYDROCARBONS: NWTPH-HCID | BTEX | BTEX/NWTPH-G | NWTPH-G | NWTPH-Dx | 1664 SGT-HEM (TPH) | 1664 HEM (FOG) | ORGANICS: 8260/624 VOA | 8260 CHLOR SOLVENTS | 8270-625 SEMI VOA | 8270 PAH/PNA | 8082/608 PCB | cPAHs+Naphth. 8270 | METALS: TOTAL METALS RCRA 8 | TOTAL METALS (SPECIFY) Ca, Cr, Pb, Ni, Zn | TCLP METALS RCRA 8 | TCLP METALS (SPECIFY) | OTHER: PH 9040/9045 | TX/TOX/EOX | TURBIDITY | FLASH POINT | BOD | SOLIDS (SPECIFY) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 Exc-G2B-1 | 8/2/19 | 11:00 | | | | | | | X | | | | | | | | X | X | | | | | | | | | |
| 2 Exc-G6B-3 | 8/2/19 | 11:10 | | | | | | | X | | | | | | | | X | X | | | | | | | | | |
| 3 Exc-H8C-5 | | 10:15 | | | | | | | X | | | | | | | | X | X | | | | | | | | | |
| 4 Exc-H9C-5 | | 10:30 | | | | | | | X | | | | | | | | X | X | | | | | | | | | |
| 5 Exc-H10-2 | | 10:00 | | | | | | | X | | | | | | | | X | X | | | | | | | | | |
| 6 Exc-H11-1 | | 10:45 | | | | | | | X | | | | | | | | X | X | | | | | | | | | |
| 7 Exc-E2C-2.5 | | 12:30 | | | | | | | X | | | | | | | | X | X | | | | | | | | | |
| 8 Exc-E3C-1.5 | | 12:40 | | | | | | | X | | | | | | | | X | X | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Disp

LAB USE ONLY

| | SIGNATURE | PRINTED NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|---|
| RELINQUISHED BY | George Ifther | George Ifther | Herrera | 8/2/19 | 15:22 |
| RECEIVED BY | Loni Hamilton | Loni Hamilton | Spectra | 8-2-19 | 15:22 |
| RELINQUISHED BY | | | | | |
| RECEIVED BY | | | | | |

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Laboratories, LLC*

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08/28/2019

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Ste 1100
Seattle, WA 98121

| | |
|---|---|
| Project: | Prairie Pit |
| Client ID: | Exc-H8C2-5 |
| Sample Matrix: | Soil |
| Date Sampled: | 08/12/2019 |
| Date Received: | 08/13/2019 |
| Spectra Project: | 2019080316 |
| Spectra Number: | 1 |
| | Rush |

| Analyte | Result | Units | Method |
|---|---|---|---|
| Diesel | <10 | mg/Kg | NWTPH-D |
| Oil | <50 | mg/Kg | NWTPH-D |
| Total Cadmium | < 0.3 | mg/Kg | SW846 6010D |
| Total Chromium | 17.8 | mg/Kg | SW846 6010D |
| Total Lead | < 2.5 | mg/Kg | SW846 6010D |
| Total Nickel | 20.8 | mg/Kg | SW846 6010D |
| Total Zinc | 31.3 | mg/Kg | SW846 6010D |
| Benzo(a)Anthracene | <0.036 | mg/Kg | SW846 8270D |
| Benzo(a)Pyrene | <0.036 | mg/Kg | SW846 8270D |
| Benzo(b)Fluoranthene | <0.036 | mg/Kg | SW846 8270D |
| Benzo(k)Fluoranthene | <0.036 | mg/Kg | SW846 8270D |
| Chrysene | <0.036 | mg/Kg | SW846 8270D |
| Dibenz(a,h)Anthracene | <0.036 | mg/Kg | SW846 8270D |
| Indeno(1,2,3-cd)Pyrene | <0.036 | mg/Kg | SW846 8270D |

| Surrogate | % Recovery | Method |
|---|---|---|
| p-Terphenyl | 59 | NWTPH-D |
| Nitrobenzene-d5 | 26 | SW846 8270D |
| 2-Fluorobiphenyl | 25 | SW846 8270D |
| p-Terphenyl-d14 | 67 | SW846 8270D |

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Jeffrey Cooper, Laboratory Manager

a5/mlh

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08/28/2019

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2200 6th Ave
Ste 1100
Seattle, WA 98121

Project: Prairie Pit
Client ID: Exc-G6B2-4
Sample Matrix: Soil
Date Sampled: 08/13/2019
Date Received: 08/13/2019
Spectra Project: 2019080316
Spectra Number: 2
Rush

| Analyte | Result | Units | Method |
|---|---|---|---|
| Diesel | <10 | mg/Kg | NWTPH-D |
| Oil | <50 | mg/Kg | NWTPH-D |
| Total Cadmium | < 0.3 | mg/Kg | SW846 6010D |
| Total Chromium | 13.1 | mg/Kg | SW846 6010D |
| Total Lead | 36.4 | mg/Kg | SW846 6010D |
| Total Nickel | 12.1 | mg/Kg | SW846 6010D |
| Total Zinc | 40.2 | mg/Kg | SW846 6010D |
| Benzo(a)Anthracene | <0.036 | mg/Kg | SW846 8270D |
| Benzo(a)Pyrene | <0.036 | mg/Kg | SW846 8270D |
| Benzo(b)Fluoranthene | <0.036 | mg/Kg | SW846 8270D |
| Benzo(k)Fluoranthene | <0.036 | mg/Kg | SW846 8270D |
| Chrysene | <0.036 | mg/Kg | SW846 8270D |
| Dibenz(a,h)Anthracene | <0.036 | mg/Kg | SW846 8270D |
| Indeno(1,2,3-cd)Pyrene | <0.036 | mg/Kg | SW846 8270D |

| Surrogate | % Recovery | Method |
|---|---|---|
| p-Terphenyl | 56 | NWTPH-D |
| Nitrobenzene-d5 | 28 | SW846 8270D |
| 2-Fluorobiphenyl | 30 | SW846 8270D |
| p-Terphenyl-d14 | 61 | SW846 8270D |

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asmlh

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08/28/2019

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Ste 1100
Seattle, WA 98121

Project: Prairie Pit
Client ID: Exc-E3C2-2
Sample Matrix: Soil
Date Sampled: 08/13/2019
Date Received: 08/13/2019
Spectra Project: 2019080316
Spectra Number: 3
Rush

| Analyte | Result | Units | Method |
|---|---|---|---|
| Diesel | <10 | mg/Kg | NWTPH-D |
| Oil | <50 | mg/Kg | NWTPH-D |
| Total Cadmium | < 0.3 | mg/Kg | SW846 6010D |
| Total Chromium | 13.8 | mg/Kg | SW846 6010D |
| Total Lead | < 2.5 | mg/Kg | SW846 6010D |
| Total Nickel | 14.6 | mg/Kg | SW846 6010D |
| Total Zinc | 23.6 | mg/Kg | SW846 6010D |
| Benzo(a)Anthracene | <0.036 | mg/Kg | SW846 8270D |
| Benzo(a)Pyrene | <0.036 | mg/Kg | SW846 8270D |
| Benzo(b)Fluoranthene | <0.036 | mg/Kg | SW846 8270D |
| Benzo(k)Fluoranthene | <0.036 | mg/Kg | SW846 8270D |
| Chrysene | <0.036 | mg/Kg | SW846 8270D |
| Dibenz(a,h)Anthracene | <0.036 | mg/Kg | SW846 8270D |
| Indeno(1,2,3-cd)Pyrene | <0.036 | mg/Kg | SW846 8270D |

| Surrogate | % Recovery | Method |
|---|---|---|
| p-Terphenyl | 54 | NWTPH-D |
| Nitrobenzene-d5 | 29 | SW846 8270D |
| 2-Fluorobiphenyl | 28 | SW846 8270D |
| p-Terphenyl-d14 | 64 | SW846 8270D |

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Jeffrey Cooper, Laboratory Manager

gsmlh

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August 15, 2019

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Method: NWTPH-Dx
Sample Matrix: Soil
Spectra Project: 2019080316
Applies to Spectra #: 1-3
Units: mg/Kg

## HYDROCARBON ANALYSIS
## QUALITY CONTROL RESULTS

### MS/MSD

Spiked Sample: 2019080316-2

Date Extracted: 8/14/2019
Date Analyzed: 8/14/2019

| Compound | Sample Result | Spike Amount Added | Spike Amount Found | Percent Recovery | Dup. Spike Amount Found | Percent Recovery | % RPD |
|---|---|---|---|---|---|---|---|
| Diesel | <10 | 83 | 52.3 | 63 | 56.1 | 68 | 7.0 |

### BLANK SPIKE (LCS)

Date Extracted: 8/14/2019
Date Analyzed: 8/14/2019

| Compound | Sample Result | Spike Amount Added | Spike Amount Found | Percent Recovery |
|---|---|---|---|---|
| Diesel | <10.0 | 125 | 65 | 52 |

### METHOD BLANK

Date Extracted: 8/14/2019
Date Analyzed: 8/14/2019

| | | |
|---|---|---|
| Diesel | <10.0 | mg/Kg |
| Heavy Oil | <50.0 | mg/Kg |

Surrogate Recovery:

| | |
|---|---|
| p-terphenyl | 67% |

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Ashley Cooper, Laboratory Manager

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8/14/2019

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Ste 1100
Seattle, WA 98121

Units: mg/Kg
Spectra Project: 2019080316
Applies to Spectra #'s 1-3
Analyst: SCJ

## QUALITY CONTROL RESULTS

### ICP Metals SW846 6010D - Soil/Solid

#### Method Blank

Date Digested: 8/14/2019 Date Analyzed: 8/14/2019

| Element | Blank Result |
|---|---|
| Cadmium | < 0.3 |
| Chromium | < 0.7 |
| Copper | < 0.7 |
| Lead | < 2.5 |
| Nickel | < 1.5 |
| Zinc | < 0.6 |

#### Laboratory Control Sample (LCS)

Date Digested: 8/14/2019 Date Analyzed: 8/14/2019

| Element | Spike Added | LCS Conc. | LCS %Rec |
|---|---|---|---|
| Cadmium | 200.0 | 194.4 | 97.2 |
| Chromium | 200.0 | 195.7 | 97.9 |
| Copper | 200.0 | 200.1 | 100.1 |
| Lead | 200.0 | 198.2 | 99.1 |
| Nickel | 200.0 | 190.9 | 95.5 |
| Zinc | 200.0 | 187.7 | 93.9 |

LCS Recovery limits 80-120%

#### Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Digested: 8/14/2019 Date Analyzed: 8/14/2019
Sample Spiked: 2019080318-1

| Element | Sample Conc. | Spike Conc. | MS Conc. | MS %Rec | MSD Conc | MSD %Rec | RPD |
|---|---|---|---|---|---|---|---|
| Cadmium | 0.0 | 200.0 | 194.8 | 97.4 | 194.6 | 97.3 | 0.1 |
| Chromium | 47.5 | 200.0 | 226.1 | 89.3 | 220.8 | 86.7 | 3.0 |
| Copper | 20.0 | 200.0 | 218.9 | 99.5 | 213.2 | 96.6 | 2.9 |
| Lead | 19.1 | 200.0 | 212.1 | 96.5 | 210.9 | 95.9 | 0.6 |
| Nickel | 43.1 | 200.0 | 224.6 | 90.8 | 214.3 | 85.6 | 5.8 |
| Zinc | 94.8 | 200.0 | 292.9 | 99.1 | 282.6 | 93.9 | 5.3 |

Comment:
Recovery Limits 75-125%
RPD Limit 20

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Laboratory Manager

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August 15, 2019

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Seattle, WA 98121

| | | | |
|---|---|---|---|
| Sample Matrix: | Soil | Date Extracted: | 8/14/2019 |
| Spectra Project: | 2019080316 | Date Analyzed: | 8/14/2019 |
| Applies to: | #1-3 | Dilution: | 1 |
| | | < = less than | |

## SEMIVOLATILE ORGANIC ANALYSIS METHOD BLANK RESULTS — METHOD 8270

| Compound | mg/Kg | Compound | mg/Kg |
|---|---|---|---|
| Pyridine | < 0.33 | Acenaphthene | < 0.03 |
| N-Nitrosodimethylamine | < 0.08 | 2,4-Dinitrophenol | < 0.33 |
| Aniline | < 0.33 | 4-Nitrophenol | < 0.08 |
| Phenol | < 0.08 | Dibenzofuran | < 0.08 |
| bis(2-Chloroethyl)Ether | < 0.08 | 2,4-Dinitrotoluene | < 0.08 |
| 2-Chlorophenol | < 0.08 | 2,6-Dinitrotoluene | < 0.08 |
| 1,3-Dichlorobenzene | < 0.08 | Diethylphthalate | < 0.08 |
| 1,4-Dichlorobenzene | < 0.08 | 4-Chlorophenyl-phenylether | < 0.08 |
| Benzyl Alcohol | < 0.08 | Fluorene | < 0.03 |
| 1,2-Dichlorobenzene | < 0.08 | 4-Nitroaniline | < 0.08 |
| 2-Methylphenol | < 0.08 | 4,6-Dinitro-2-Methylphenol | < 0.33 |
| bis(2-Chloroisipropyl)Ether | < 0.08 | Ni-Nitrosodiphenylamine | < 0.08 |
| 4-Methylphenol | < 0.08 | 4-Bromophenyl-phenylether | < 0.08 |
| N-Nitroso-di-n-Propylamine | < 0.08 | Hexachlorobenzene | < 0.08 |
| Hexachloroethane | < 0.08 | Pentachlorophenol | < 0.08 |
| Nitrobenzene | < 0.08 | Phenanthrene | < 0.03 |
| Isophorone | < 0.08 | Anthracene | < 0.03 |
| 2-Nitrophenol | < 0.08 | Di-n-butylphthalate | < 0.08 |
| 2,4-Dimethylphenol | < 0.08 | Fluoranthene | < 0.03 |
| Benzoic Acid | < 0.33 | Benzidine | < 0.66 |
| bis(2-Chloroethoxy)methane | < 0.08 | Pyrene | < 0.03 |
| 2,4-Dichlorophenol | < 0.08 | Butylbenzylphthalate | < 0.08 |
| 1,2,4-Trichlorobenzene | < 0.08 | 3,3-Dichlorobenzidine | < 0.66 |
| Naphthalene | < 0.03 | Benzo(a)anthracene | < 0.03 |
| 4-Chloroaniline | < 0.08 | bis(2-ethylhexyl)phthalate | < 0.08 |
| Hexachlorobutadiene | < 0.08 | Chrysene | < 0.03 |
| 4-Chloro-3-Methylphenol | < 0.08 | Di-n-octyl phthalate | < 0.08 |
| 2-Methylnaphthalene | < 0.03 | Benzo(b)Fluoranthene | < 0.03 |
| Hexachlorocyclopentadiene | < 0.08 | Benzo(k)Fluoranthene | < 0.03 |
| 2,4,6-Trichlorophenol | < 0.08 | Benzo(a)pyrene | < 0.03 |
| 2,4,5-Trichlorophenol | < 0.08 | Indeno(1,2,3-c,d)pyrene | < 0.03 |
| 2-Chloronaphthalene | < 0.08 | Dibenzo(a,h)anthracene | < 0.03 |
| 2-Nitroaniline | < 0.08 | Benzo(g,h,i)perylene | < 0.03 |
| Dimethyl Phthalate | < 0.08 | Carbazole | < 0.08 |
| Acenaphthylene | < 0.03 | Biphenyl | < 0.08 |
| 3-Nitroaniline | < 0.08 | 1-Methylnaphthalene | < 0.08 |
| | | Dibenzothiophene | < 0.08 |
| | | Tetrachlorophenol | < 0.08 |

SURROGATE RECOVERIES

| | | | | | |
|---|---|---|---|---|---|
| Nitrobenzene-d5 | 38 | % | 2-Fluorophenol | 35 | % |
| 2-Fluorobiphenyl | 36 | % | Phenol-d5 | 36 | % |
| p-Terphenyl-d14 | 73 | % | 2,4,6-Tribromophenol | 28 | % |

Jeffrey Cooper
Laboratory Manager

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August 15, 2019

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Seattle, WA 98121

| | |
|---|---|
| Spectra Project # | 2019080316 |
| Sample Spiked: | Method Blank |
| Date Extracted: | 8/14/2019 |
| Date Analyzed: | 8/14/2019 |
| Units: | mg/Kg |
| Applies to Spectra #'s: | #1-3 |

## GCMS Semi-Volatile Organic Analysis, Method 8270D (Scan Mode)
## Blank Spike (LCS) Results in Soil/ Solids

| Compound | Blank Conc. | Spike Added | LCS Conc. | LCS %Rec | Rec. Limits |
|---|---|---|---|---|---|
| Phenol | <0.08 | 2.50 | 0.62 | 25 | 32-84 |
| 2-Chlorophenol | <0.08 | 2.50 | 0.63 | 25 | 35-84 |
| 1,4-Dichlorobenzene | <0.08 | 1.67 | 0.41 | 24 | 15-90 |
| N-Nitroso-Di-N-Propylamine | <0.08 | 1.67 | 0.45 | 27 | 31-104 |
| 1,2,4-Trichlorobenzene | <0.08 | 1.67 | 0.42 | 25 | 24-82 |
| 4-Chloro-3-Methylphenol | <0.08 | 2.50 | 0.65 | 26 | 34-107 |
| Acenaphthene | <0.03 | 1.67 | 0.49 | 30 | 34-98 |
| 2,4-Dinitrotoluene | <0.08 | 1.67 | 0.51 | 30 | 32-105 |
| 4-Nitrophenol | <0.08 | 2.50 | 1.05 | 42 | 26-156 |
| Pentachlorophenol | <0.08 | 2.50 | 0.11 | 5 | 0-85 |
| Pyrene | <0.03 | 1.67 | 0.98 | 59 | 40-135 |

| Surrogates | %Rec |
|---|---|
| 2-Fluorophenol | 24 |
| Phenol-d5 | 25 |
| Nitrobenzene-d5 | 30 |
| 2-Fluorobiphenyl | 28 |
| 2,4,6-Tribromophenol | 28 |
| p-Terphenyl-d14 | 65 |

Jeffrey Cooper
Laboratory Manager

**Marie Holt** 20190803 16

**From:** George Iftner <giftner@herrerainc.com>
**Sent:** Thursday, August 15, 2019 3:46 PM
**To:** Marie Holt
**Cc:** Jeff Cooper
**Subject:** RE: 2019080316 - Prairie Pit report fix?

Hi Marie,
I saw a couple of typos in the sample IDs (due to my poor handwriting I'm sure!) – can you fix and resend?

- Instead of Exc-G6B2-4, should be **Exc-G6B2-4**
- Instead of Exc-E3C2-2, should be **Exc-E3C2-2**

Thanks,
George

HERRERA

**GEORGE IFTNER**

**From:** Marie Holt [mailto:MarieH@spectra-lab.com]
**Sent:** Thursday, August 15, 2019 3:33 PM
**To:** George Iftner <giftner@herrerainc.com>
**Subject:** 2019080316 - Prairie Pit

Hello,

I hope you're having a great day! Attached are the results for the above referenced project. Please let us know if you have any questions.

Thank you for your business!

*Marie Holt*
*Customer Support and Office Manager*

**SPECTRA Laboratories**
2221 Ross Way
Tacoma, WA 98421
P (253) 272-4850
F (253) 572-9838
marieh@spectra-lab.com

# SPECTRA Laboratories

2221 Ross Way, Tacoma, WA 98421
(253) 272-4850 Fax (253) 572-9838
www.spectra-lab.com info@spectra-lab.com

SPECIAL INSTRUCTIONS/COMMENTS:
Hold for PCBs until requested -
~~*~~results by thursday if possible

Return Samples: Y (N) Page 1 of 1

# CHAIN OF CUSTODY

SPECTRA PROJECT # 1908031G

STANDARD ☐ RUSH ☑

CLIENT: Herrera ADDRESS: 2200 6th Ave, Seattle 98121 ADDRESS CHANGE ☐

PROJECT: Prairie Pit

CONTACT: George Iftner

SAMPLED BY: George Iftner

PHONE: 206 787 8210 FAX:

e-MAIL: giftner@herrerainc.com Prefer FAX ☐ or e-MAIL ☑

PURCHASE ORDER # 16-06310-011 Task 100

| | SAMPLE ID | DATE SAMPLED | TIME SAMPLED | MATRIX | NUMBER OF CONTAINERS | HYDROCARBONS: NWTPH-HCID | BTEX | BTEX/NWTPH-G | NWTPH-G | NWTPH-Dx | 1664 SGT-HEM (TPH) | 1664 HEM (FOG) | ORGANICS: 8260/624 VOA | 8260 CHLOR SOLVENTS | 8270-625 SEMI VOA | 8270 ~~PAH/PNA~~ cPAHs | 8082/608 PCB | METALS: TOTAL METALS RCRA 8 | TOTAL METALS (SPECIFY) Cd, Cr, Pb, Ni, Zn | TCLP METALS RCRA 8 | TCLP METALS (SPECIFY) | OTHER: PH 9040/9045 | TX/TOX/EOX | TURBIDITY | FLASH POINT | BOD | SOLIDS (SPECIFY) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | EXC-H8C2-5 | 8/12/19 | 14:20 | soil | 1 | | | | | X | | | | | | X | | X | | | | | | | | | |
| 2 | EXC-G6B2-4 | 8/13/19 | 10100 | ↓ | 1 | | | | | X | | | | | | X | | X | | | | | | | | | |
| 3 | EXC-E3C2-2 | ↓ | 1510 | ↓ | 1 | | | | | X | | | | | | X | | X | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

LAB USE ONLY

| | SIGNATURE | PRINTED NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|---|
| RELINQUISHED BY | George Iftner | George Iftner | Herrera | 8/13/19 | 16:15 |
| RECEIVED BY | Kaitlyn Reiley | Kaitlyn Reiley | Spectra | 8.13.19 | 1615 |
| RELINQUISHED BY | | | | | |
| RECEIVED BY | | | | | |

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2% per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. *Spectra Laboratories, LLC*

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 8, 2019

George Iftner
Herrera Environmental Consultants, Inc.
2200 6th Avenue, Suite 1100
Seattle, WA 98121

Re: Analytical Data for Project 16-06310-011
Laboratory Reference No. 1908-056

Dear George:

Enclosed are the analytical results and associated quality control data for samples submitted on August 5, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**Case Narrative**

Samples were collected on August 5, 2019 and received by the laboratory on August 5, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**GASOLINE RANGE ORGANICS**
**NWTPH-Gx**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-1** | | | | | |
| Laboratory ID: | 08-056-01 | | | | | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 8-6-19 | 8-6-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***102*** | ***59-122*** | | | | |
| **Client ID:** | **MW-2** | | | | | |
| Laboratory ID: | 08-056-02 | | | | | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 8-6-19 | 8-6-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***100*** | ***59-122*** | | | | |
| **Client ID:** | **MW-3** | | | | | |
| Laboratory ID: | 08-056-03 | | | | | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 8-6-19 | 8-6-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***101*** | ***59-122*** | | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**GASOLINE RANGE ORGANICS**
**NWTPH-Gx**
**QUALITY CONTROL**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0806W1 | | | | | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 8-6-19 | 8-6-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***99*** | ***59-122*** | | | | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | | |
| Laboratory ID: | 08-056-01 | | | | | | | | | | |
| | ORIG | DUP | | | | | | | | | |
| Gasoline | **ND** | **ND** | NA | NA | | NA | | NA | NA | 30 | |
| ***Surrogate:*** | | | | | | | | | | | |
| ***Fluorobenzene*** | | | | | | ***102*** | ***99*** | ***59-122*** | | | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-1** | | | | | |
| Laboratory ID: | 08-056-01 | | | | | |
| tert-Amyl Methyl Ether (TAME) | ND | 1.0 | EPA 8260C | 8-7-19 | 8-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***98*** | ***75-127*** | | | | |
| ***Toluene-d8*** | ***102*** | ***80-127*** | | | | |
| ***4-Bromofluorobenzene*** | ***106*** | ***78-125*** | | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-2** | | | | | |
| Laboratory ID: | 08-056-02 | | | | | |
| tert-Amyl Methyl Ether (TAME) | ND | 1.0 | EPA 8260C | 8-7-19 | 8-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***95*** | ***75-127*** | | | | |
| ***Toluene-d8*** | ***102*** | ***80-127*** | | | | |
| ***4-Bromofluorobenzene*** | ***101*** | ***78-125*** | | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-3** | | | | | |
| Laboratory ID: | 08-056-03 | | | | | |
| tert-Amyl Methyl Ether (TAME) | ND | 1.0 | EPA 8260C | 8-7-19 | 8-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***95*** | ***75-127*** | | | | |
| ***Toluene-d8*** | ***103*** | ***80-127*** | | | | |
| ***4-Bromofluorobenzene*** | ***104*** | ***78-125*** | | | | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**
**METHOD BLANK QUALITY CONTROL**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| Laboratory ID: | MB0807W2 | | | | | |
| tert-Amyl Methyl Ether (TAME) | ND | 1.0 | EPA 8260C | 8-7-19 | 8-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***96*** | ***75-127*** | | | | |
| ***Toluene-d8*** | ***102*** | ***80-127*** | | | | |
| ***4-Bromofluorobenzene*** | ***105*** | ***78-125*** | | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**
**SB/SBD QUALITY CONTROL**

Matrix: Water
Units: ug/L

| Analyte | Result | | Spike Level | | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **SPIKE BLANKS** | | | | | | | | | | |
| Laboratory ID: | SB0807W1 | | | | | | | | | |
| | SB | SBD | SB | SBD | SB | SBD | | | | |
| 1,1-Dichloroethene | **10.3** | **9.85** | 10.0 | 10.0 | 103 | 99 | 63-130 | 4 | 17 | |
| Benzene | **9.95** | **9.68** | 10.0 | 10.0 | 100 | 97 | 76-125 | 3 | 19 | |
| Trichloroethene | **10.9** | **10.5** | 10.0 | 10.0 | 109 | 105 | 76-121 | 4 | 18 | |
| Toluene | **10.2** | **9.90** | 10.0 | 10.0 | 102 | 99 | 80-124 | 3 | 18 | |
| Chlorobenzene | **11.1** | **10.3** | 10.0 | 10.0 | 111 | 103 | 75-120 | 7 | 19 | |
| ***Surrogate:*** | | | | | | | | | | |
| ***Dibromofluoromethane*** | | | | | ***100*** | ***102*** | ***75-127*** | | | |
| ***Toluene-d8*** | | | | | ***100*** | ***100*** | ***80-127*** | | | |
| ***4-Bromofluorobenzene*** | | | | | ***100*** | ***97*** | ***78-125*** | | | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**DIESEL AND HEAVY OIL RANGE ORGANICS**
**NWTPH-Dx**

Matrix: Water
Units: mg/L (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-1** | | | | | |
| Laboratory ID: | 08-056-01 | | | | | |
| Diesel Range Organics | **ND** | 0.29 | NWTPH-Dx | 8-6-19 | 8-6-19 | |
| Lube Oil Range Organics | **ND** | 0.46 | NWTPH-Dx | 8-6-19 | 8-6-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***95*** | ***50-150*** | | | | |
| **Client ID:** | **MW-2** | | | | | |
| Laboratory ID: | 08-056-02 | | | | | |
| Diesel Range Organics | **ND** | 0.26 | NWTPH-Dx | 8-6-19 | 8-6-19 | |
| Lube Oil Range Organics | **ND** | 0.41 | NWTPH-Dx | 8-6-19 | 8-6-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***100*** | ***50-150*** | | | | |
| **Client ID:** | **MW-3** | | | | | |
| Laboratory ID: | 08-056-03 | | | | | |
| Diesel Range Organics | **ND** | 0.25 | NWTPH-Dx | 8-6-19 | 8-6-19 | |
| Lube Oil Range Organics | **ND** | 0.40 | NWTPH-Dx | 8-6-19 | 8-6-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***96*** | ***50-150*** | | | | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**DIESEL AND HEAVY OIL RANGE ORGANICS**
**NWTPH-Dx**
**QUALITY CONTROL**

Matrix: Water
Units: mg/L (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0806W1 | | | | | |
| Diesel Range Organics | **ND** | 0.25 | NWTPH-Dx | 8-6-19 | 8-6-19 | |
| Lube Oil Range Organics | **ND** | 0.40 | NWTPH-Dx | 8-6-19 | 8-6-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***87*** | ***50-150*** | | | | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | | |
| Laboratory ID: | SB0806W1 | | | | | | | | | | |
| | ORIG | DUP | | | | | | | | | |
| Diesel Fuel #2 | **0.775** | **0.768** | NA | NA | | NA | | NA | 1 | NA | |
| Lube Oil Range | **ND** | **ND** | NA | NA | | NA | | NA | NA | NA | |
| ***Surrogate:*** | | | | | | | | | | | |
| ***o-Terphenyl*** | | | | | | ***91*** | ***90*** | ***50-150*** | | | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**
page 1 of 2

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-1** | | | | | |
| Laboratory ID: | 08-056-01 | | | | | |
| Dichlorodifluoromethane | ND | 0.25 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Chloromethane | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Vinyl Chloride | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromomethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Chloroethane | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Trichlorofluoromethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1-Dichloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Iodomethane | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Methylene Chloride | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| (trans) 1,2-Dichloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1-Dichloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 2,2-Dichloropropane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| (cis) 1,2-Dichloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromochloromethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Chloroform | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1,1-Trichloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Carbon Tetrachloride | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1-Dichloropropene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Benzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dichloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Trichloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dichloropropane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Dibromomethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromodichloromethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 2-Chloroethyl Vinyl Ether | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| (cis) 1,3-Dichloropropene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Toluene | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| (trans) 1,3-Dichloropropene | ND | 0.27 | EPA 8260C | 8-6-19 | 8-6-19 | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**
page 2 of 2

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-1** | | | | | |
| Laboratory ID: | 08-056-01 | | | | | |
| 1,1,2-Trichloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Tetrachloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,3-Dichloropropane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Dibromochloromethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dibromoethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Chlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Ethylbenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| m,p-Xylene | ND | 0.40 | EPA 8260C | 8-6-19 | 8-6-19 | |
| o-Xylene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromoform | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2,3-Trichloropropane | ND | 0.25 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 2-Chlorotoluene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 4-Chlorotoluene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,3-Dichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,4-Dichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dibromo-3-chloropropane | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2,4-Trichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Hexachlorobutadiene | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2,3-Trichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***103*** | ***75-127*** | | | | |
| ***Toluene-d8*** | ***99*** | ***80-127*** | | | | |
| ***4-Bromofluorobenzene*** | ***96*** | ***78-125*** | | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**
page 1 of 2

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-2** | | | | | |
| Laboratory ID: | 08-056-02 | | | | | |
| Dichlorodifluoromethane | ND | 0.25 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Chloromethane | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Vinyl Chloride | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromomethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Chloroethane | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Trichlorofluoromethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1-Dichloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Iodomethane | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Methylene Chloride | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| (trans) 1,2-Dichloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1-Dichloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 2,2-Dichloropropane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| (cis) 1,2-Dichloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromochloromethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Chloroform | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1,1-Trichloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Carbon Tetrachloride | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1-Dichloropropene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Benzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dichloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Trichloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dichloropropane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Dibromomethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromodichloromethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 2-Chloroethyl Vinyl Ether | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| (cis) 1,3-Dichloropropene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Toluene | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| (trans) 1,3-Dichloropropene | ND | 0.27 | EPA 8260C | 8-6-19 | 8-6-19 | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**
page 2 of 2

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-2** | | | | | |
| Laboratory ID: | 08-056-02 | | | | | |
| 1,1,2-Trichloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Tetrachloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,3-Dichloropropane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Dibromochloromethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dibromoethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Chlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Ethylbenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| m,p-Xylene | ND | 0.40 | EPA 8260C | 8-6-19 | 8-6-19 | |
| o-Xylene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromoform | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2,3-Trichloropropane | ND | 0.25 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 2-Chlorotoluene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 4-Chlorotoluene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,3-Dichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,4-Dichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dibromo-3-chloropropane | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2,4-Trichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Hexachlorobutadiene | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2,3-Trichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***102*** | ***75-127*** | | | | |
| ***Toluene-d8*** | ***99*** | ***80-127*** | | | | |
| ***4-Bromofluorobenzene*** | ***98*** | ***78-125*** | | | | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**
page 1 of 2

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-3** | | | | | |
| Laboratory ID: | 08-056-03 | | | | | |
| Dichlorodifluoromethane | ND | 0.25 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Chloromethane | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Vinyl Chloride | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromomethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Chloroethane | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Trichlorofluoromethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1-Dichloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Iodomethane | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Methylene Chloride | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| (trans) 1,2-Dichloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1-Dichloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 2,2-Dichloropropane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| (cis) 1,2-Dichloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromochloromethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Chloroform | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1,1-Trichloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Carbon Tetrachloride | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1-Dichloropropene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Benzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dichloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Trichloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dichloropropane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Dibromomethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromodichloromethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 2-Chloroethyl Vinyl Ether | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| (cis) 1,3-Dichloropropene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Toluene | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| (trans) 1,3-Dichloropropene | ND | 0.27 | EPA 8260C | 8-6-19 | 8-6-19 | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**
page 2 of 2

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-3** | | | | | |
| Laboratory ID: | 08-056-03 | | | | | |
| 1,1,2-Trichloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Tetrachloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,3-Dichloropropane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Dibromochloromethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dibromoethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Chlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Ethylbenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| m,p-Xylene | ND | 0.40 | EPA 8260C | 8-6-19 | 8-6-19 | |
| o-Xylene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromoform | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2,3-Trichloropropane | ND | 0.25 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 2-Chlorotoluene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 4-Chlorotoluene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,3-Dichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,4-Dichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dibromo-3-chloropropane | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2,4-Trichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Hexachlorobutadiene | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2,3-Trichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***102*** | ***75-127*** | | | | |
| ***Toluene-d8*** | ***98*** | ***80-127*** | | | | |
| ***4-Bromofluorobenzene*** | ***96*** | ***78-125*** | | | | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**
**METHOD BLANK QUALITY CONTROL**
page 1 of 2

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| Laboratory ID: | MB0806W1 | | | | | |
| Dichlorodifluoromethane | ND | 0.25 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Chloromethane | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Vinyl Chloride | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromomethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Chloroethane | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Trichlorofluoromethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1-Dichloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Iodomethane | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Methylene Chloride | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| (trans) 1,2-Dichloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1-Dichloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 2,2-Dichloropropane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| (cis) 1,2-Dichloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromochloromethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Chloroform | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1,1-Trichloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Carbon Tetrachloride | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1-Dichloropropene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Benzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dichloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Trichloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dichloropropane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Dibromomethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromodichloromethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 2-Chloroethyl Vinyl Ether | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| (cis) 1,3-Dichloropropene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Toluene | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| (trans) 1,3-Dichloropropene | ND | 0.27 | EPA 8260C | 8-6-19 | 8-6-19 | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**
**METHOD BLANK QUALITY CONTROL**
page 2 of 2

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| Laboratory ID: | MB0806W1 | | | | | |
| 1,1,2-Trichloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Tetrachloroethene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,3-Dichloropropane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Dibromochloromethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dibromoethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Chlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1,1,2-Tetrachloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Ethylbenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| m,p-Xylene | ND | 0.40 | EPA 8260C | 8-6-19 | 8-6-19 | |
| o-Xylene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromoform | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Bromobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,1,2,2-Tetrachloroethane | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2,3-Trichloropropane | ND | 0.25 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 2-Chlorotoluene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 4-Chlorotoluene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,3-Dichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,4-Dichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2-Dibromo-3-chloropropane | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2,4-Trichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |
| Hexachlorobutadiene | ND | 1.0 | EPA 8260C | 8-6-19 | 8-6-19 | |
| 1,2,3-Trichlorobenzene | ND | 0.20 | EPA 8260C | 8-6-19 | 8-6-19 | |

| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** |
|---|---|---|
| ***Dibromofluoromethane*** | ***105*** | ***75-127*** |
| ***Toluene-d8*** | ***100*** | ***80-127*** |
| ***4-Bromofluorobenzene*** | ***100*** | ***78-125*** |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260C**
**SB/SBD QUALITY CONTROL**

Matrix: Water
Units: ug/L

| Analyte | Result | | Spike Level | | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **SPIKE BLANKS** | | | | | | | | | | |
| Laboratory ID: | SB0806W1 | | | | | | | | | |
| | SB | SBD | SB | SBD | SB | SBD | | | | |
| 1,1-Dichloroethene | **10.2** | **10.3** | 10.0 | 10.0 | 102 | 103 | 63-130 | 1 | 17 | |
| Benzene | **10.2** | **10.2** | 10.0 | 10.0 | 102 | 102 | 76-125 | 0 | 19 | |
| Trichloroethene | **10.9** | **10.8** | 10.0 | 10.0 | 109 | 108 | 76-121 | 1 | 18 | |
| Toluene | **10.3** | **10.1** | 10.0 | 10.0 | 103 | 101 | 80-124 | 2 | 18 | |
| Chlorobenzene | **11.0** | **10.9** | 10.0 | 10.0 | 110 | 109 | 75-120 | 1 | 19 | |
| ***Surrogate:*** | | | | | | | | | | |
| ***Dibromofluoromethane*** | | | | | ***104*** | ***106*** | ***75-127*** | | | |
| ***Toluene-d8*** | | | | | ***102*** | ***101*** | ***80-127*** | | | |
| ***4-Bromofluorobenzene*** | | | | | ***101*** | ***100*** | ***78-125*** | | | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**1,2-DIBROMOETHANE (EDB)**
**EPA 8011**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-1** | | | | | |
| Laboratory ID: | 08-056-01 | | | | | |
| EDB | **ND** | 0.0096 | EPA 8011 | 8-8-19 | 8-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***TCMX*** | ***99*** | ***25-143*** | | | | |
| **Client ID:** | **MW-2** | | | | | |
| Laboratory ID: | 08-056-02 | | | | | |
| EDB | **ND** | 0.0096 | EPA 8011 | 8-8-19 | 8-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***TCMX*** | ***103*** | ***25-143*** | | | | |
| **Client ID:** | **MW-3** | | | | | |
| Laboratory ID: | 08-056-03 | | | | | |
| EDB | **ND** | 0.0097 | EPA 8011 | 8-8-19 | 8-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***TCMX*** | ***64*** | ***25-143*** | | | | |



This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**1,2-DIBROMOETHANE (EDB)**
**EPA 8011**
**QUALITY CONTROL**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0808W1 | | | | | |
| EDB | **ND** | 0.010 | EPA 8011 | 8-8-19 | 8-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***TCMX*** | ***74*** | ***25-143*** | | | | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SPIKE BLANKS** | | | | | | | | | | | |
| Laboratory ID: | SB0808W1 | | | | | | | | | | |
| | SB | SBD | SB | SBD | | SB | SBD | | | | |
| EDB | **0.0803** | **0.0787** | 0.100 | 0.100 | N/A | **80** | **79** | 57-124 | 2 | 15 | |
| ***Surrogate:*** | | | | | | | | | | | |
| ***TCMX*** | | | | | | ***59*** | ***67*** | ***25-143*** | | | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**PCBs EPA 8082A**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-1** | | | | | |
| Laboratory ID: | 08-056-01 | | | | | |
| Aroclor 1016 | **ND** | 0.054 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1221 | **ND** | 0.054 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1232 | **ND** | 0.054 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1242 | **ND** | 0.054 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1248 | **ND** | 0.054 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1254 | **ND** | 0.054 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1260 | **ND** | 0.054 | EPA 8082A | 8-7-19 | 8-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***DCB*** | ***87*** | ***50-153*** | | | | |
| **Client ID:** | **MW-2** | | | | | |
| Laboratory ID: | 08-056-02 | | | | | |
| Aroclor 1016 | **ND** | 0.051 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1221 | **ND** | 0.051 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1232 | **ND** | 0.051 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1242 | **ND** | 0.051 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1248 | **ND** | 0.051 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1254 | **ND** | 0.051 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1260 | **ND** | 0.051 | EPA 8082A | 8-7-19 | 8-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***DCB*** | ***101*** | ***50-153*** | | | | |
| **Client ID:** | **MW-3** | | | | | |
| Laboratory ID: | 08-056-03 | | | | | |
| Aroclor 1016 | **ND** | 0.050 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1221 | **ND** | 0.050 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1232 | **ND** | 0.050 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1242 | **ND** | 0.050 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1248 | **ND** | 0.050 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1254 | **ND** | 0.050 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1260 | **ND** | 0.050 | EPA 8082A | 8-7-19 | 8-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***DCB*** | ***101*** | ***50-153*** | | | | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**PCBs EPA 8082A**
**QUALITY CONTROL**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0807W1 | | | | | |
| Aroclor 1016 | **ND** | 0.050 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1221 | **ND** | 0.050 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1232 | **ND** | 0.050 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1242 | **ND** | 0.050 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1248 | **ND** | 0.050 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1254 | **ND** | 0.050 | EPA 8082A | 8-7-19 | 8-8-19 | |
| Aroclor 1260 | **ND** | 0.050 | EPA 8082A | 8-7-19 | 8-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***DCB*** | ***110*** | ***50-153*** | | | | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SPIKE BLANKS** | | | | | | | | | | | |
| Laboratory ID: | SB0807W1 | | | | | | | | | | |
| | SB | SBD | SB | SBD | | SB | SBD | | | | |
| Aroclor 1260 | **0.503** | **0.528** | 0.500 | 0.500 | N/A | **101** | **106** | 78-129 | 5 | 12 | |
| ***Surrogate:*** | | | | | | | | | | | |
| ***DCB*** | | | | | | ***107*** | ***111*** | ***50-153*** | | | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**TOTAL METALS**
**EPA 200.8**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-1** | | | | | |
| Laboratory ID: | 08-056-01 | | | | | |
| Cadmium | **ND** | 4.4 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Chromium | **22** | 11 | EPA 200.8 | 8-7-19 | 8-8-19 | |
| Lead | **4.6** | 1.1 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Nickel | **ND** | 22 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Zinc | **40** | 28 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| **Client ID:** | **MW-2** | | | | | |
| Laboratory ID: | 08-056-02 | | | | | |
| Cadmium | **ND** | 4.4 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Chromium | **ND** | 11 | EPA 200.8 | 8-7-19 | 8-8-19 | |
| Lead | **ND** | 1.1 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Nickel | **ND** | 22 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Zinc | **ND** | 28 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| **Client ID:** | **MW-3** | | | | | |
| Laboratory ID: | 08-056-03 | | | | | |
| Cadmium | **ND** | 4.4 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Chromium | **ND** | 11 | EPA 200.8 | 8-7-19 | 8-8-19 | |
| Lead | **ND** | 1.1 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Nickel | **ND** | 22 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Zinc | **ND** | 28 | EPA 200.8 | 8-7-19 | 8-7-19 | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**TOTAL METALS**
**EPA 200.8**
**QUALITY CONTROL**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0807WH1 | | | | | |
| Cadmium | **ND** | 4.4 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Chromium | **ND** | 11 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Lead | **ND** | 1.1 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Nickel | **ND** | 22 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Zinc | **ND** | 28 | EPA 200.8 | 8-7-19 | 8-7-19 | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | |
| Laboratory ID: | 08-049-01 | | | | | | | | | |
| | ORIG | DUP | | | | | | | | |
| Cadmium | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| Chromium | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| Lead | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| Nickel | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| Zinc | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| **MATRIX SPIKES** | | | | | | | | | | |
| Laboratory ID: | 08-049-01 | | | | | | | | | |
| | MS | MSD | MS | MSD | | MS | MSD | | | |
| Cadmium | **118** | **116** | 111 | 111 | ND | **107** | **105** | 75-125 | 2 | 20 |
| Chromium | **103** | **106** | 111 | 111 | ND | **93** | **95** | 75-125 | 2 | 20 |
| Lead | **112** | **112** | 111 | 111 | ND | **101** | **101** | 75-125 | 0 | 20 |
| Nickel | **108** | **107** | 111 | 111 | ND | **98** | **96** | 75-125 | 1 | 20 |
| Zinc | **110** | **111** | 111 | 111 | ND | **99** | **100** | 75-125 | 1 | 20 |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**PAHs EPA 8270D/SIM**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-1** | | | | | |
| Laboratory ID: | 08-056-01 | | | | | |
| Naphthalene | **ND** | 0.11 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| 2-Methylnaphthalene | **ND** | 0.11 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| 1-Methylnaphthalene | **ND** | 0.11 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Benzo[a]anthracene | **ND** | 0.011 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Chrysene | **ND** | 0.011 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Benzo[b]fluoranthene | **ND** | 0.011 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.011 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Benzo[a]pyrene | **ND** | 0.011 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Indeno(1,2,3-c,d)pyrene | **ND** | 0.011 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.011 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***78*** | ***27 - 106*** | | | | |
| ***Pyrene-d10*** | ***83*** | ***35 - 98*** | | | | |
| ***Terphenyl-d14*** | ***85*** | ***41 - 129*** | | | | |



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Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**PAHs EPA 8270D/SIM**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-2** | | | | | |
| Laboratory ID: | 08-056-02 | | | | | |
| Naphthalene | **ND** | 0.10 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| 2-Methylnaphthalene | **ND** | 0.10 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| 1-Methylnaphthalene | **ND** | 0.10 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Benzo[a]anthracene | **ND** | 0.010 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Chrysene | **ND** | 0.010 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Benzo[b]fluoranthene | **ND** | 0.010 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.010 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Benzo[a]pyrene | **ND** | 0.010 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Indeno(1,2,3-c,d)pyrene | **ND** | 0.010 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.010 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***58*** | ***27 - 106*** | | | | |
| ***Pyrene-d10*** | ***73*** | ***35 - 98*** | | | | |
| ***Terphenyl-d14*** | ***75*** | ***41 - 129*** | | | | |



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Laboratory Reference: 1908-056
Project: 16-06310-011

**PAHs EPA 8270D/SIM**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-3** | | | | | |
| Laboratory ID: | 08-056-03 | | | | | |
| Naphthalene | **ND** | 0.11 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| 2-Methylnaphthalene | **ND** | 0.11 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| 1-Methylnaphthalene | **ND** | 0.11 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Benzo[a]anthracene | **ND** | 0.011 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Chrysene | **ND** | 0.011 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Benzo[b]fluoranthene | **ND** | 0.011 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.011 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Benzo[a]pyrene | **ND** | 0.011 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Indeno(1,2,3-c,d)pyrene | **ND** | 0.011 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.011 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***60*** | ***27 - 106*** | | | | |
| ***Pyrene-d10*** | ***68*** | ***35 - 98*** | | | | |
| ***Terphenyl-d14*** | ***69*** | ***41 - 129*** | | | | |



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Date of Report: August 8, 2019
Samples Submitted: August 5, 2019
Laboratory Reference: 1908-056
Project: 16-06310-011

**PAHs EPA 8270D/SIM**
**METHOD BLANK QUALITY CONTROL**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| Laboratory ID: | MB0808W1 | | | | | |
| Naphthalene | **ND** | 0.10 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| 2-Methylnaphthalene | **ND** | 0.10 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| 1-Methylnaphthalene | **ND** | 0.10 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Benzo[a]anthracene | **ND** | 0.010 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Chrysene | **ND** | 0.010 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Benzo[b]fluoranthene | **ND** | 0.010 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.010 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Benzo[a]pyrene | **ND** | 0.010 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Indeno(1,2,3-c,d)pyrene | **ND** | 0.010 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.010 | EPA 8270D/SIM | 8-8-19 | 8-8-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***69*** | ***27 - 106*** | | | | |
| ***Pyrene-d10*** | ***90*** | ***35 - 98*** | | | | |
| ***Terphenyl-d14*** | ***93*** | ***41 - 129*** | | | | |



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Laboratory Reference: 1908-056
Project: 16-06310-011

**PAHs EPA 8270D/SIM**
**SB/SBD QUALITY CONTROL**

Matrix: Water
Units: ug/L

| Analyte | Result | | Spike Level | | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **SPIKE BLANKS** | | | | | | | | | | |
| Laboratory ID: | SB0808W1 | | | | | | | | | |
| | SB | SBD | SB | SBD | SB | SBD | | | | |
| Naphthalene | **0.311** | **0.323** | 0.500 | 0.500 | 62 | 65 | 36 - 99 | 4 | 40 | |
| Benzo[a]anthracene | **0.451** | **0.463** | 0.500 | 0.500 | 90 | 93 | 59 - 127 | 3 | 24 | |
| Chrysene | **0.373** | **0.396** | 0.500 | 0.500 | 75 | 79 | 57 - 122 | 6 | 24 | |
| Benzo[b]fluoranthene | **0.439** | **0.483** | 0.500 | 0.500 | 88 | 97 | 58 - 123 | 10 | 26 | |
| Benzo(j,k)fluoranthene | **0.425** | **0.423** | 0.500 | 0.500 | 85 | 85 | 60 - 123 | 0 | 22 | |
| Benzo[a]pyrene | **0.405** | **0.423** | 0.500 | 0.500 | 81 | 85 | 54 - 121 | 4 | 24 | |
| Indeno(1,2,3-c,d)pyrene | **0.429** | **0.445** | 0.500 | 0.500 | 86 | 89 | 55 - 125 | 4 | 26 | |
| Dibenz[a,h]anthracene | **0.422** | **0.443** | 0.500 | 0.500 | 84 | 89 | 57 - 127 | 5 | 25 | |
| ***Surrogate:*** | | | | | | | | | | |
| ***2-Fluorobiphenyl*** | | | | | ***64*** | ***70*** | ***27 - 106*** | | | |
| ***Pyrene-d10*** | | | | | ***77*** | ***83*** | ***35 - 98*** | | | |
| ***Terphenyl-d14*** | | | | | ***88*** | ***93*** | ***41 - 129*** | | | |



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Project: 16-06310-011

**DISSOLVED METALS**
**EPA 200.8**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-1** | | | | | |
| Laboratory ID: | 08-056-01 | | | | | |
| Cadmium | **ND** | 4.0 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Chromium | **ND** | 10 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Lead | **ND** | 1.0 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Nickel | **ND** | 20 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Zinc | **ND** | 25 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| **Client ID:** | **MW-2** | | | | | |
| Laboratory ID: | 08-056-02 | | | | | |
| Cadmium | **ND** | 4.0 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Chromium | **ND** | 10 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Lead | **ND** | 1.0 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Nickel | **ND** | 20 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Zinc | **ND** | 25 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| **Client ID:** | **MW-3** | | | | | |
| Laboratory ID: | 08-056-03 | | | | | |
| Cadmium | **ND** | 4.0 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Chromium | **ND** | 10 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Lead | **ND** | 1.0 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Nickel | **ND** | 20 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Zinc | **ND** | 25 | EPA 200.8 | 8-7-19 | 8-7-19 | |



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**DISSOLVED METALS**
**EPA 200.8**
**QUALITY CONTROL**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB0807D1 | | | | | |
| Cadmium | **ND** | 4.0 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Chromium | **ND** | 10 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Lead | **ND** | 1.0 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Nickel | **ND** | 20 | EPA 200.8 | 8-7-19 | 8-7-19 | |
| Zinc | **ND** | 25 | EPA 200.8 | 8-7-19 | 8-7-19 | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | | |
| Laboratory ID: | 08-015-01 | | | | | | | | | | |
| | ORIG | DUP | | | | | | | | | |
| Cadmium | **ND** | **ND** | NA | NA | | NA | | NA | NA | 20 | |
| Chromium | **ND** | **ND** | NA | NA | | NA | | NA | NA | 20 | |
| Lead | **ND** | **ND** | NA | NA | | NA | | NA | NA | 20 | |
| Nickel | **ND** | **ND** | NA | NA | | NA | | NA | NA | 20 | |
| Zinc | **36.2** | **36.2** | NA | NA | | NA | | NA | 0 | 20 | |
| **MATRIX SPIKES** | | | | | | | | | | | |
| Laboratory ID: | 08-015-02 | | | | | | | | | | |
| | MS | MSD | MS | MSD | | MS | MSD | | | | |
| Cadmium | **76.4** | **77.6** | 80.0 | 80.0 | ND | **96** | **97** | 75-125 | 2 | 20 | |
| Chromium | **65.8** | **65.4** | 80.0 | 80.0 | ND | **82** | **82** | 75-125 | 1 | 20 | |
| Lead | **77.4** | **78.8** | 80.0 | 80.0 | ND | **97** | **99** | 75-125 | 2 | 20 | |
| Nickel | **68.6** | **68.2** | 80.0 | 80.0 | ND | **86** | **85** | 75-125 | 1 | 20 | |
| Zinc | **107** | **103** | 80.0 | 80.0 | 36.2 | **88** | **84** | 75-125 | 3 | 20 | |



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OnSite Environmental Inc.

**Data Qualifiers and Abbreviations**

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference



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# Chain of Custody

Page 1 of 1

**OnSite Environmental Inc.**
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: Herrera
Project Number: 16-0630-011
Project Name: Prairie Pit
Project Manager: George Ifther
Sampled by: George Ifther

**Turnaround Request (in working days)**
(Check One)
☐ Same Day ☐ 1 Day
☑ 2 Days ☐ 3 Days
☐ Standard (7 Days)
☐ _____ (other)

**Laboratory Number:** 08-056

| Lab ID | Sample Identification | Date Sampled | Time Sampled | Matrix | Number of Containers | NWTPH-HCID | NWTPH-Gx/BTEX /TAME/EDC | NWTPH-Gx | NWTPH-Dx (☐ Acid / SG Clean-up) | Volatiles 8260C | Halogenated Volatiles 8260C | EDB EPA 8011 (Waters Only) | Semivolatiles 8270D/SIM (with low-level PAHs) | PAHs 8270D/SIM (low-level) | PCBs 8082A | Organochlorine Pesticides 8081B | Organophosphorus Pesticides 8270D/SIM | Chlorinated Acid Herbicides 8151A | Total RCRA Metals | Total Metals cd,cr,Pb,Ni,Zn | TCLP Metals | HEM (oil and grease) 1664A | cPAHs + Naph Th. | Dissolved metals (Cd,Cr,Pb,Ni,Zn) | | | % Moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-1 | 8/5/19 | 11:30 | water | 15 | | X | | X | | X | X | | | X | | | | | X | | | X | X | | | |
| 2 | MW-2 | ↓ | 12:50 | ↓ | 15 | | X | | X | | X | X | | | X | | | | | X | | | X | X | | | |
| 3 | MW-3 | ↓ | 14:25 | ↓ | 15 | | X | | X | | X | X | | | X | | | | | X | | | X | X | | | |

| | Signature | Company | Date | Time |
|---|---|---|---|---|
| Relinquished | George Ifther | Herrera | 8/5/19 | 16:40 |
| Received | Kathleen Green | OSE | 8/5/19 | 1640 |
| Relinquished | | | | |
| Received | | | | |
| Relinquished | | | | |
| Received | | | | |
| Reviewed/Date | | Reviewed/Date | | |

**Comments/Special Instructions**
Dissolved metals were field Filtered.

Data Package: Standard ☐ Level III ☐ Level IV ☐
Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☑

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

November 8, 2019

George Iftner
Herrera Environmental Consultants, Inc.
2200 6th Avenue, Suite 1100
Seattle, WA 98121

Re: Analytical Data for Project 16-06310-011
Laboratory Reference No. 1911-015

Dear George:

Enclosed are the analytical results and associated quality control data for samples submitted on November 1, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**Case Narrative**

Samples were collected on November 1, 2019 and received by the laboratory on November 1, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

PAHs EPA 8270E/SIM:

Sample MW-3, the method blank and spike blanks each had one surrogate recovery out of control limits. This is within allowance of our standard operating procedure as long as the recovery is above 10%.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.



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Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**GASOLINE RANGE ORGANICS**
**NWTPH-Gx**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-1** | | | | | |
| Laboratory ID: | 11-015-01 | | | | | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 11-4-19 | 11-4-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***89*** | ***59-122*** | | | | |
| **Client ID:** | **MW-2** | | | | | |
| Laboratory ID: | 11-015-02 | | | | | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 11-4-19 | 11-4-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***89*** | ***59-122*** | | | | |
| **Client ID:** | **MW-3** | | | | | |
| Laboratory ID: | 11-015-03 | | | | | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 11-4-19 | 11-4-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***88*** | ***59-122*** | | | | |
| **Client ID:** | **Trip Blank** | | | | | |
| Laboratory ID: | 11-015-04 | | | | | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 11-4-19 | 11-4-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***92*** | ***59-122*** | | | | |



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Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**GASOLINE RANGE ORGANICS**
**NWTPH-Gx**
**QUALITY CONTROL**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB1104W1 | | | | | |
| Gasoline | **ND** | 100 | NWTPH-Gx | 11-4-19 | 11-4-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Fluorobenzene*** | ***89*** | ***59-122*** | | | | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | | |
| Laboratory ID: | 11-015-01 | | | | | | | | | | |
| | ORIG | DUP | | | | | | | | | |
| Gasoline | **ND** | **ND** | NA | NA | | NA | | NA | NA | 30 | |
| ***Surrogate:*** | | | | | | | | | | | |
| ***Fluorobenzene*** | | | | | | ***89*** | ***87*** | ***59-122*** | | | |



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Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260D**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-1** | | | | | |
| Laboratory ID: | 11-015-01 | | | | | |
| Benzene | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| 1,2-Dichloroethane | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| Toluene | ND | 1.0 | EPA 8260D | 11-4-19 | 11-4-19 | |
| Ethylbenzene | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| m,p-Xylene | ND | 0.40 | EPA 8260D | 11-4-19 | 11-4-19 | |
| o-Xylene | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***111*** | ***75-127*** | | | | |
| ***Toluene-d8*** | ***102*** | ***80-127*** | | | | |
| ***4-Bromofluorobenzene*** | ***89*** | ***78-125*** | | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260D**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-2** | | | | | |
| Laboratory ID: | 11-015-02 | | | | | |
| Benzene | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| 1,2-Dichloroethane | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| Toluene | ND | 1.0 | EPA 8260D | 11-4-19 | 11-4-19 | |
| Ethylbenzene | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| m,p-Xylene | ND | 0.40 | EPA 8260D | 11-4-19 | 11-4-19 | |
| o-Xylene | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***114*** | ***75-127*** | | | | |
| ***Toluene-d8*** | ***105*** | ***80-127*** | | | | |
| ***4-Bromofluorobenzene*** | ***98*** | ***78-125*** | | | | |



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Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260D**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-3** | | | | | |
| Laboratory ID: | 11-015-03 | | | | | |
| Benzene | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| 1,2-Dichloroethane | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| Toluene | ND | 1.0 | EPA 8260D | 11-4-19 | 11-4-19 | |
| Ethylbenzene | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| m,p-Xylene | ND | 0.40 | EPA 8260D | 11-4-19 | 11-4-19 | |
| o-Xylene | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***116*** | ***75-127*** | | | | |
| ***Toluene-d8*** | ***105*** | ***80-127*** | | | | |
| ***4-Bromofluorobenzene*** | ***97*** | ***78-125*** | | | | |



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Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260D**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **Trip Blank** | | | | | |
| Laboratory ID: | 11-015-04 | | | | | |
| Benzene | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| 1,2-Dichloroethane | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| Toluene | ND | 1.0 | EPA 8260D | 11-4-19 | 11-4-19 | |
| Ethylbenzene | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| m,p-Xylene | ND | 0.40 | EPA 8260D | 11-4-19 | 11-4-19 | |
| o-Xylene | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***109*** | ***75-127*** | | | | |
| ***Toluene-d8*** | ***103*** | ***80-127*** | | | | |
| ***4-Bromofluorobenzene*** | ***92*** | ***78-125*** | | | | |



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Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260D**
**QUALITY CONTROL**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB1104W1 | | | | | |
| Benzene | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| 1,2-Dichloroethane | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| Toluene | ND | 1.0 | EPA 8260D | 11-4-19 | 11-4-19 | |
| Ethylbenzene | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| m,p-Xylene | ND | 0.40 | EPA 8260D | 11-4-19 | 11-4-19 | |
| o-Xylene | ND | 0.20 | EPA 8260D | 11-4-19 | 11-4-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***Dibromofluoromethane*** | ***112*** | ***75-127*** | | | | |
| ***Toluene-d8*** | ***103*** | ***80-127*** | | | | |
| ***4-Bromofluorobenzene*** | ***89*** | ***78-125*** | | | | |



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Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**VOLATILE ORGANICS EPA 8260D**
**QUALITY CONTROL**

Matrix: Water
Units: ug/L

| Analyte | Result | | Spike Level | | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **SPIKE BLANKS** | | | | | | | | | | |
| Laboratory ID: | SB1104W1 | | | | | | | | | |
| | SB | SBD | SB | SBD | SB | SBD | | | | |
| 1,1-Dichloroethene | **9.13** | **9.30** | 10.0 | 10.0 | 91 | 93 | 63-130 | 2 | 17 | |
| Benzene | **10.3** | **10.6** | 10.0 | 10.0 | 103 | 106 | 76-125 | 3 | 19 | |
| Trichloroethene | **11.1** | **11.2** | 10.0 | 10.0 | 111 | 112 | 76-121 | 1 | 18 | |
| Toluene | **10.6** | **10.9** | 10.0 | 10.0 | 106 | 109 | 80-124 | 3 | 18 | |
| Chlorobenzene | **10.1** | **10.1** | 10.0 | 10.0 | 101 | 101 | 75-120 | 0 | 19 | |
| ***Surrogate:*** | | | | | | | | | | |
| ***Dibromofluoromethane*** | | | | | ***107*** | ***112*** | ***75-127*** | | | |
| ***Toluene-d8*** | | | | | ***103*** | ***106*** | ***80-127*** | | | |
| ***4-Bromofluorobenzene*** | | | | | ***95*** | ***93*** | ***78-125*** | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**DIESEL AND HEAVY OIL RANGE ORGANICS**
**NWTPH-Dx**

Matrix: Water
Units: mg/L (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-1** | | | | | |
| Laboratory ID: | 11-015-01 | | | | | |
| Diesel Range Organics | **ND** | 0.21 | NWTPH-Dx | 11-4-19 | 11-5-19 | |
| Lube Oil Range Organics | **ND** | 0.21 | NWTPH-Dx | 11-4-19 | 11-5-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***111*** | ***50-150*** | | | | |
| **Client ID:** | **MW-2** | | | | | |
| Laboratory ID: | 11-015-02 | | | | | |
| Diesel Range Organics | **ND** | 0.21 | NWTPH-Dx | 11-4-19 | 11-5-19 | |
| Lube Oil Range Organics | **ND** | 0.21 | NWTPH-Dx | 11-4-19 | 11-5-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***106*** | ***50-150*** | | | | |
| **Client ID:** | **MW-3** | | | | | |
| Laboratory ID: | 11-015-03 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 11-4-19 | 11-5-19 | |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 11-4-19 | 11-5-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***116*** | ***50-150*** | | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**DIESEL AND HEAVY OIL RANGE ORGANICS**
**NWTPH-Dx**
**QUALITY CONTROL**

Matrix: Water
Units: mg/L (ppm)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB1104W1 | | | | | |
| Diesel Range Organics | **ND** | 0.20 | NWTPH-Dx | 11-4-19 | 11-5-19 | |
| Lube Oil Range Organics | **ND** | 0.20 | NWTPH-Dx | 11-4-19 | 11-5-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***o-Terphenyl*** | ***120*** | ***50-150*** | | | | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | |
| Laboratory ID: | 11-015-03 | | | | | | | | | |
| | ORIG | DUP | | | | | | | | |
| Diesel Range | **ND** | **ND** | NA | NA | | NA | NA | NA | NA | |
| Lube Oil Range | **ND** | **ND** | NA | NA | | NA | NA | NA | NA | |
| ***Surrogate:*** | | | | | | | | | | |
| ***o-Terphenyl*** | | | | | | ***116*** | ***110*** | ***50-150*** | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**PAHs EPA 8270E/SIM**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-1** | | | | | |
| Laboratory ID: | 11-015-01 | | | | | |
| Naphthalene | **ND** | 0.097 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| 2-Methylnaphthalene | **ND** | 0.097 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| 1-Methylnaphthalene | **ND** | 0.097 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Benzo[a]anthracene | **ND** | 0.0097 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Chrysene | **ND** | 0.0097 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Benzo[b]fluoranthene | **ND** | 0.0097 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.0097 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Benzo[a]pyrene | **ND** | 0.0097 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Indeno(1,2,3-c,d)pyrene | **ND** | 0.0097 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.0097 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***76*** | ***27 - 106*** | | | | |
| ***Pyrene-d10*** | ***87*** | ***35 - 98*** | | | | |
| ***Terphenyl-d14*** | ***92*** | ***41 - 129*** | | | | |



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**PAHs EPA 8270E/SIM**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-2** | | | | | |
| Laboratory ID: | 11-015-02 | | | | | |
| Naphthalene | **ND** | 0.10 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| 2-Methylnaphthalene | **ND** | 0.10 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| 1-Methylnaphthalene | **ND** | 0.10 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Benzo[a]anthracene | **ND** | 0.010 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Chrysene | **ND** | 0.010 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Benzo[b]fluoranthene | **ND** | 0.010 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.010 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Benzo[a]pyrene | **ND** | 0.010 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Indeno(1,2,3-c,d)pyrene | **ND** | 0.010 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.010 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***75*** | ***27 - 106*** | | | | |
| ***Pyrene-d10*** | ***93*** | ***35 - 98*** | | | | |
| ***Terphenyl-d14*** | ***103*** | ***41 - 129*** | | | | |



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Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**PAHs EPA 8270E/SIM**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-3** | | | | | |
| Laboratory ID: | 11-015-03 | | | | | |
| Naphthalene | **ND** | 0.095 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| 2-Methylnaphthalene | **ND** | 0.095 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| 1-Methylnaphthalene | **ND** | 0.095 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Benzo[a]anthracene | **ND** | 0.0095 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Chrysene | **ND** | 0.0095 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Benzo[b]fluoranthene | **ND** | 0.0095 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.0095 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Benzo[a]pyrene | **ND** | 0.0095 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Indeno(1,2,3-c,d)pyrene | **ND** | 0.0095 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.0095 | EPA 8270E/SIM | 11-6-19 | 11-7-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***64*** | ***27 - 106*** | | | | |
| ***Pyrene-d10*** | ***99*** | ***35 - 98*** | | | | Q |
| ***Terphenyl-d14*** | ***85*** | ***41 - 129*** | | | | |



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Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**PAHs EPA 8270E/SIM**
**QUALITY CONTROL**

Matrix: Water
Units: ug/L

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB1106W2 | | | | | |
| Naphthalene | **ND** | 0.10 | EPA 8270E/SIM | 11-6-19 | 11-6-19 | |
| 2-Methylnaphthalene | **ND** | 0.10 | EPA 8270E/SIM | 11-6-19 | 11-6-19 | |
| 1-Methylnaphthalene | **ND** | 0.10 | EPA 8270E/SIM | 11-6-19 | 11-6-19 | |
| Benzo[a]anthracene | **ND** | 0.010 | EPA 8270E/SIM | 11-6-19 | 11-6-19 | |
| Chrysene | **ND** | 0.010 | EPA 8270E/SIM | 11-6-19 | 11-6-19 | |
| Benzo[b]fluoranthene | **ND** | 0.010 | EPA 8270E/SIM | 11-6-19 | 11-6-19 | |
| Benzo(j,k)fluoranthene | **ND** | 0.010 | EPA 8270E/SIM | 11-6-19 | 11-6-19 | |
| Benzo[a]pyrene | **ND** | 0.010 | EPA 8270E/SIM | 11-6-19 | 11-6-19 | |
| Indeno(1,2,3-c,d)pyrene | **ND** | 0.010 | EPA 8270E/SIM | 11-6-19 | 11-6-19 | |
| Dibenz[a,h]anthracene | **ND** | 0.010 | EPA 8270E/SIM | 11-6-19 | 11-6-19 | |
| ***Surrogate:*** | ***Percent Recovery*** | ***Control Limits*** | | | | |
| ***2-Fluorobiphenyl*** | ***90*** | ***27 - 106*** | | | | |
| ***Pyrene-d10*** | ***107*** | ***35 - 98*** | | | | Q |
| ***Terphenyl-d14*** | ***118*** | ***41 - 129*** | | | | |



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Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**PAHs EPA 8270E/SIM**
**QUALITY CONTROL**

Matrix: Water
Units: ug/L

| Analyte | Result | | Spike Level | | Percent Recovery | | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **SPIKE BLANKS** | | | | | | | | | | |
| Laboratory ID: | SB1106W2 | | | | | | | | | |
| | SB | SBD | SB | SBD | SB | SBD | | | | |
| Naphthalene | **0.364** | **0.362** | 0.500 | 0.500 | 73 | 72 | 36 - 99 | 1 | 40 | |
| Benzo[a]anthracene | **0.493** | **0.478** | 0.500 | 0.500 | 99 | 96 | 59 - 127 | 3 | 24 | |
| Chrysene | **0.513** | **0.499** | 0.500 | 0.500 | 103 | 100 | 57 - 122 | 3 | 24 | |
| Benzo[b]fluoranthene | **0.496** | **0.497** | 0.500 | 0.500 | 99 | 99 | 58 - 123 | 0 | 26 | |
| Benzo(j,k)fluoranthene | **0.507** | **0.500** | 0.500 | 0.500 | 101 | 100 | 60 - 123 | 1 | 22 | |
| Benzo[a]pyrene | **0.484** | **0.478** | 0.500 | 0.500 | 97 | 96 | 54 - 121 | 1 | 24 | |
| Indeno(1,2,3-c,d)pyrene | **0.478** | **0.482** | 0.500 | 0.500 | 96 | 96 | 55 - 125 | 1 | 26 | |
| Dibenz[a,h]anthracene | **0.501** | **0.503** | 0.500 | 0.500 | 100 | 101 | 57 - 127 | 0 | 25 | |
| ***Surrogate:*** | | | | | | | | | | |
| ***2-Fluorobiphenyl*** | | | | | ***93*** | ***91*** | ***27 - 106*** | | | |
| ***Pyrene-d10*** | | | | | ***110*** | ***105*** | ***35 - 98*** | | | Q,Q |
| ***Terphenyl-d14*** | | | | | ***116*** | ***125*** | ***41 - 129*** | | | |



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Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**TOTAL METALS**
**EPA 200.8**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-1** | | | | | |
| Laboratory ID: | 11-015-01 | | | | | |
| Cadmium | **ND** | 4.4 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| Chromium | **ND** | 11 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| Lead | **ND** | 1.1 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| Nickel | **ND** | 22 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| Zinc | **ND** | 28 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| **Client ID:** | **MW-2** | | | | | |
| Laboratory ID: | 11-015-02 | | | | | |
| Cadmium | **ND** | 4.4 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| Chromium | **ND** | 11 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| Lead | **ND** | 1.1 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| Nickel | **ND** | 22 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| Zinc | **ND** | 28 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| **Client ID:** | **MW-3** | | | | | |
| Laboratory ID: | 11-015-03 | | | | | |
| Cadmium | **ND** | 4.4 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| Chromium | **ND** | 11 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| Lead | **ND** | 1.1 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| Nickel | **ND** | 22 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| Zinc | **ND** | 28 | EPA 200.8 | 11-5-19 | 11-5-19 | |



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Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**TOTAL METALS**
**EPA 200.8**
**QUALITY CONTROL**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB1105WM1 | | | | | |
| Cadmium | **ND** | 4.4 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| Chromium | **ND** | 11 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| Lead | **ND** | 1.1 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| Nickel | **ND** | 22 | EPA 200.8 | 11-5-19 | 11-5-19 | |
| Zinc | **ND** | 28 | EPA 200.8 | 11-5-19 | 11-5-19 | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | |
| Laboratory ID: | 11-015-03 | | | | | | | | | |
| | ORIG | DUP | | | | | | | | |
| Cadmium | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| Chromium | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| Lead | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| Nickel | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| Zinc | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| **MATRIX SPIKES** | | | | | | | | | | |
| Laboratory ID: | 11-015-03 | | | | | | | | | |
| | MS | MSD | MS | MSD | | MS | MSD | | | |
| Cadmium | **106** | **107** | 111 | 111 | ND | **95** | **96** | 75-125 | 1 | 20 |
| Chromium | **115** | **112** | 111 | 111 | ND | **104** | **101** | 75-125 | 3 | 20 |
| Lead | **107** | **109** | 111 | 111 | ND | **97** | **98** | 75-125 | 2 | 20 |
| Nickel | **109** | **106** | 111 | 111 | ND | **98** | **96** | 75-125 | 2 | 20 |
| Zinc | **117** | **113** | 111 | 111 | ND | **105** | **102** | 75-125 | 3 | 20 |



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Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**DISSOLVED METALS**
**EPA 200.8**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **Client ID:** | **MW-1** | | | | | |
| Laboratory ID: | 11-015-01 | | | | | |
| Cadmium | **ND** | 4.0 | EPA 200.8 | | 11-4-19 | |
| Chromium | **ND** | 10 | EPA 200.8 | | 11-4-19 | |
| Lead | **ND** | 1.0 | EPA 200.8 | | 11-4-19 | |
| Nickel | **ND** | 20 | EPA 200.8 | | 11-4-19 | |
| Zinc | **ND** | 25 | EPA 200.8 | | 11-4-19 | |
| **Client ID:** | **MW-2** | | | | | |
| Laboratory ID: | 11-015-02 | | | | | |
| Cadmium | **ND** | 4.0 | EPA 200.8 | | 11-4-19 | |
| Chromium | **ND** | 10 | EPA 200.8 | | 11-4-19 | |
| Lead | **ND** | 1.0 | EPA 200.8 | | 11-4-19 | |
| Nickel | **ND** | 20 | EPA 200.8 | | 11-4-19 | |
| Zinc | **ND** | 25 | EPA 200.8 | | 11-4-19 | |
| **Client ID:** | **MW-3** | | | | | |
| Laboratory ID: | 11-015-03 | | | | | |
| Cadmium | **ND** | 4.0 | EPA 200.8 | | 11-4-19 | |
| Chromium | **ND** | 10 | EPA 200.8 | | 11-4-19 | |
| Lead | **ND** | 1.0 | EPA 200.8 | | 11-4-19 | |
| Nickel | **ND** | 20 | EPA 200.8 | | 11-4-19 | |
| Zinc | **ND** | 25 | EPA 200.8 | | 11-4-19 | |



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Date of Report: November 8, 2019
Samples Submitted: November 1, 2019
Laboratory Reference: 1911-015
Project: 16-06310-011

**DISSOLVED METALS**
**EPA 200.8**
**QUALITY CONTROL**

Matrix: Water
Units: ug/L (ppb)

| Analyte | Result | PQL | Method | Date Prepared | Date Analyzed | Flags |
|---|---|---|---|---|---|---|
| **METHOD BLANK** | | | | | | |
| Laboratory ID: | MB1101F1 | | | | | |
| Cadmium | **ND** | 4.0 | EPA 200.8 | 11-1-19 | 11-4-19 | |
| Chromium | **ND** | 10 | EPA 200.8 | 11-1-19 | 11-4-19 | |
| Lead | **ND** | 1.0 | EPA 200.8 | 11-1-19 | 11-4-19 | |
| Nickel | **ND** | 20 | EPA 200.8 | 11-1-19 | 11-4-19 | |
| Zinc | **ND** | 25 | EPA 200.8 | 11-1-19 | 11-4-19 | |

| Analyte | Result | | Spike Level | | Source Result | Percent Recovery | Recovery Limits | RPD | RPD Limit | Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **DUPLICATE** | | | | | | | | | | |
| Laboratory ID: | 11-015-03 | | | | | | | | | |
| | ORIG | DUP | | | | | | | | |
| Cadmium | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| Chromium | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| Lead | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| Nickel | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| Zinc | **ND** | **ND** | NA | NA | | NA | NA | NA | 20 | |
| **MATRIX SPIKES** | | | | | | | | | | |
| Laboratory ID: | 11-015-03 | | | | | | | | | |
| | MS | MSD | MS | MSD | | MS | MSD | | | |
| Cadmium | **80.4** | **68.8** | 80.0 | 80.0 | ND | **101** | **86** | 75-125 | 16 | 20 |
| Chromium | **76.6** | **69.4** | 80.0 | 80.0 | ND | **96** | **87** | 75-125 | 10 | 20 |
| Lead | **78.8** | **70.8** | 80.0 | 80.0 | ND | **99** | **89** | 75-125 | 11 | 20 |
| Nickel | **75.2** | **67.0** | 80.0 | 80.0 | ND | **94** | **84** | 75-125 | 12 | 20 |
| Zinc | **78.2** | **68.8** | 80.0 | 80.0 | ND | **98** | **86** | 75-125 | 13 | 20 |



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OnSite Environmental Inc.

**Data Qualifiers and Abbreviations**

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference



This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

# Chain of Custody

Page 1 of 1

**OnSite Environmental Inc.**
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: Herrera
Project Number: 16-06310-011
Project Name: Prairie Pit
Project Manager: George Iftner
Sampled by: George Iftner

**Turnaround Request (in working days)**
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
~~☐ Standard (7 Days)~~
☑ 5 Day BY NOV 8
(other)

**Laboratory Number:** 11-015

| Lab ID | Sample Identification | Date Sampled | Time Sampled | Matrix | Number of Containers | NWTPH-HCID | NWTPH-Gx/BTEX / EDC 8260 | NWTPH-Gx | NWTPH-Dx (☐ Acid / SG Clean-up) | Volatiles 8260C | Halogenated Volatiles 8260C | EDB EPA 8011 (Waters Only) | Semivolatiles 8270D/SIM (with low-level PAHs) | PAHs 8270D/SIM (low-level) | PCBs 8082A | Organochlorine Pesticides 8081B | Organophosphorus Pesticides 8270D/SIM | Chlorinated Acid Herbicides 8151A | Total RCRA Metals | Total MTCA Metals | TCLP Metals | HEM (oil and grease) 1664A | cPAHs + Naphthalenes | Diss. + Total Metals (Cd, Cr, Ni, Pb, Zn) | | | % Moisture |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-1 | 11/1/19 | 11:10 | water | 14 | | X | | X | | | | | | | | | | | | | | X | X | | | |
| 2 | MW-2 | ↓ | 12:30 | ↓ | 14 | | X | | X | | | | | | | | | | | | | | X | X | | | |
| 3 | MW-3 | ↓ | 13:40 | ↓ | 14 | | X | | X | | | | | | | | | | | | | | X | X | | | |
| 4 | Trip Blank | | | | 4 | | X | | | | | | | | | | | | | | | | | | | | |

| | Signature | Company | Date | Time |
|---|---|---|---|---|
| Relinquished | George Iftner | Herrera Env. Cons. | 11-1-19 | 13:30 |
| Received | | ODE | 11/1/19 | 1330 |
| Relinquished | | | | |
| Received | | | | |
| Relinquished | | | | |
| Received | | | | |
| Reviewed/Date | | Reviewed/Date | | |

**Comments/Special Instructions**
① Dissolved metals were field filtered.
② HOLD for PCBs

Data Package: Standard ☐ Level III ☐ Level IV ☐
Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

# APPENDIX H

# Data Quality Assurance Review Memoranda

# Herrera Environmental Consultants, Inc.

# Internal Memorandum

**Date:** November 25, 2019

**To:** Project File 16-06310-011

**Copy To:**

**From:** Gina Catarra

**Subject:** Data Quality Assurance Review of the Prairie Pit Data

---

This memorandum presents a review of data quality for 51 soil samples and six groundwater samples collected for the Prairie Pit Project between June 27 and November 1, 2019. OnSite Environmental, Inc. (OnSite), of Redmond, Washington, Libby Environmental of Olympia, Washington, Fremont Analytical of Seattle, Washington, or Spectra Laboratories of Tacoma, Washington analyzed the samples for:

- Total petroleum hydrocarbon identification (HCID) by Ecology's NWTPH-HCID method
- Gasoline-range petroleum hydrocarbons by Ecology's NWPTH-Gx method
- Diesel- and lube oil-range petroleum hydrocarbons by Ecology's NWTPH-Dx method
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B
- Polycyclic aromatic hydrocarbons (PAHs) and naphthalene by EPA Method 8270D/SIM
- Volatile organic compounds (VOCs) by EPA Method 8260C
- Polychlorinated biphenyls (PCBs) by EPA Method 8082A
- Total metals (arsenic, cadmium, chromium, lead, nickel, and mercury) by EPA Methods 6010D/7471B
- Total and dissolved metals Total chromium (Cr) and lead (Pb) by toxicity characteristic leaching procedure (TCLP) by EPA Methods 1311/6010D
- Hexavalent chromium [Cr(VI)] by EPA Method 7196A

- Total and dissolved metals (cadmium, chromium, lead, nickel, and zinc) by EPA Method 200.8.

- 1,2-Dibromoethane (EDB) by EPA Method 8011

Results for the following samples were validated.

| Sample ID | Lab SDG | Date Collected | Analyses |
|---|---|---|---|
| TP-A-3 | 1906-324 | 6/27/19 | HCID, Dx, PAHs, PCBs, metals |
| TP-B-4 | 1906-324 | 6/27/19 | HCID, Dx, PAHs, PCBs, metals |
| TP-C-2 | 1906-324 | 6/27/19 | HCID, metals |
| TP-D-1.5 | 1906-324 | 6/27/19 | HCID, Gx/BTEX, Dx, VOCs, PAHs, PCBs, metals |
| TP-E-2 | 1906-324 | 6/27/19 | HCID, Gx/BTEX, Dx, VOCs, PAHs, PCBs, metals, Cr(VI) |
| TP-F-2.5 | 1906-324 | 6/27/19 | HCID, Gx/BTEX, Dx, VOCs, PAHs, PCBs, metals, TCLP (Pb), Cr(VI) |
| TP-K-1 | 1906-324 | 6/27/19 | HCID, Dx, PAHs, PCBs, metals, TCLP (Pb), Cr(VI) |
| Ditch-1-0 | 1906-324 | 6/27/19 | HCID, metals |
| Ditch-2-0 | 1906-324 | 6/27/19 | HCID, Gx/BTEX, Dx, PAHs, PCBs, metals, Cr(VI) |
| Ditch-3-0 | 1906-324 | 6/27/19 | Gx/BTEX, Dx, VOCs, PAHs, PCBs, metals |
| Ditch-4-0 | 1906-324 | 6/27/19 | Gx/BTEX, Dx, VOCs, PAHs, PCBs, metals, Cr(VI) |
| TP-J-0 | L190725-40 | 7/22/19 | VOC, Gx, Dx |
| TP-L-0 | L190725-40 | 7/23/19 | VOC, Gx, Dx, cPAHs, naphthalenes, PCB, metals |
| Ditch-5-0 | L190725-40 | 7/23/19 | VOC, Gx, Dx |
| Ditch-6-0 | L190725-40 | 7/23/19 | VOC, Gx, Dx, cPAHs, naphthalenes, metals |
| EXC-E-SP2 | L190725-40 | 7/23/19 | VOC, Gx, Dx |
| EXC-E1-4 | L190725-40 | 7/23/19 | VOC, Gx, Dx, cPAHs, naphthalenes, PCB, metals |
| EXC-E2-0 | L190725-40 | 7/23/19 | VOC, Gx, Dx |
| EXC-F1-0 | L190725-40 | 7/23/19 | VOC, Gx, Dx, cPAHs, naphthalenes, PCB, metals, TCLP (Pb) |
| EXC-F2-0 | L190725-40 | 7/23/19 | VOC, Gx, Dx |
| EXC-G1-1 | L190725-40 | 7/24/19 | VOC, Gx, Dx, cPAHs, naphthalenes, metals |
| EXC-G2-1 | L190725-40 | 7/24/19 | VOC, Gx, Dx |
| EXC-G3-2.5 | L190725-40 | 7/24/19 | VOC, Gx, Dx, cPAHs, naphthalenes, metals |
| EXC-G6-2.5 | L190725-40 | 7/24/19 | VOC, Gx, Dx |
| EXC-G4-1 | L190725-40 | 7/25/19 | VOC, Gx, Dx, cPAHs, naphthalenes, metals |
| EXC-G5-1 | L190725-40 | 7/25/19 | VOC, Gx, Dx, cPAHs, naphthalenes, metals, TCLP (Pb) |
| EXC-G7-1 | L190725-40 | 7/25/19 | VOC, Gx, Dx |
| EXC-G7B-1 | L190726-40 | 7/26/19 | VOCs, Gx, Dx, cPAHs, naphthalenes, metals |
| EXC-H1-1 | L190726-40 | 7/26/19 | VOCs, Gx, Dx |
| EXC-H2-1 | L190726-40 | 7/26/19 | VOCs, Gx, Dx, cPAHs, naphthalenes, metals |
| WXC-H3-1 | L190726-40 | 7/26/19 | VOCs, Gx, Dx, cPAHs, naphthalenes, metals |
| WXC-H5A-5 | L190726-40 | 7/26/19 | VOCs, Gx |

| Sample ID | Lab SDG | Date Collected | Analyses |
|---|---|---|---|
| EXC-H5B-5 | L190726-40 | 7/26/19 | VOCs, Gx |
| EXC-H5C-5 | L190726-40 | 7/26/19 | Dx, cPAHs, naphthalenes, PCBs, metals |
| EXC-H1B-1.5 | L190726-40 | 7/26/19 | Dx, cPAHs, naphthalenes, metals |
| EXC-H7-8 | L190726-40 | 7/26/19 | VOCs, Gx, Dx, cPAHs, naphthalenes, metals |
| EXC-H6-6 | L190726-40 | 7/26/19 | VOCs, Gx, Dx, cPAHs, naphthalenes, metals |
| Ditch-5B-1 | L190726-40 | 7/26/19 | Dx, cPAHs, naphthalenes, metals |
| EXC-H4-1 | L190726-40 | 7/26/19 | VOCs, Gx, Dx, cPAHs, naphthalenes, metals |
| EXC-F2B-1.5 | L190726-40 | 7/26/19 | Dx, cPAHs, naphthalenes, PCBs, metals |
| EXC-G2B-1 | 2019080052 | 8/02/2019 | Dx, cPAHs, metals |
| EXC-G6B-3 | 2019080052 | 8/02/2019 | Dx, cPAHs, metals |
| EXC-H8C-5 | 2019080052 | 8/02/2019 | Dx, cPAHs, metals |
| EXCc-H9C-5 | 2019080052 | 8/02/2019 | Dx, cPAHs, metals |
| EXC-H10-2 | 2019080052 | 8/02/2019 | Dx, cPAHs, metals |
| EXC-H11-1 | 2019080052 | 8/02/2019 | Dx, cPAHs, metals |
| EXC-E2C-2.5 | 2019080052 | 8/02/2019 | Dx, cPAHs, metals |
| EXC-E3C-1.5 | 2019080052 | 8/02/2019 | Dx, cPAHs, metals |
| MW-1 | 1908-056 | 8/05/2019 | Gx/BTEX, Dx, VOCs, EDB, PCBs, total and dissolved metals, cPAHs, naphthalene |
| MW-2 | 1908-056 | 8/05/2019 | Gx/BTEX, Dx, VOCs, EDB, PCBs, total and dissolved metals, cPAHs, naphthalene |
| MW-3 | 1908-056 | 8/05/2019 | Gx/BTEX, Dx, VOCs, EDB, PCBs, total and dissolved metals, cPAHs, naphthalene |
| EXC-H8C2-5 | 2019080316 | 8/12/2019 | Dx, cPAHs, metals |
| EXC-G6B2-4 | 2019080316 | 8/13/2019 | Dx, cPAHs, metals |
| EXC-E3C2-2 | 2019080316 | 8/13/2019 | Dx, cPAHs, metals |
| MW-1 | 1911-015 | 11/01/2019 | Gx/BTEX, Dx, VOCs, total and dissolved metals, cPAHs, naphthalene |
| MW-2 | 1911-015 | 11/01/2019 | Gx/BTEX, Dx, VOCs, total and dissolved metals, cPAHs, naphthalene |
| MW-3 | 1911-015 | 11/01/2019 | Gx/BTEX, Dx, VOCs, total and dissolved metals, cPAHs, naphthalene |

The laboratory's performance was reviewed in accordance with quality control (QC) criteria by the laboratory and in the specified methods.

Quality control data summaries submitted by the laboratories were reviewed; raw data were not submitted by the laboratories. Data qualifiers (flags) were added to the sample results in the laboratory reports. Data validation results are summarized below, followed by definitions of data qualifiers.

## Custody, Preservation, Holding Times, and Completeness—Acceptable

The samples were properly preserved, and sample custody was maintained from sample collection to receipt at the laboratories. Samples were analyzed within the required method holding times. The laboratory reports were complete and contained results for all samples and tests requested on the chain-of-custody (COC) forms.

## Laboratory Reporting Limits—Acceptable

The laboratory reporting limits were reasonable for the methods. No data were qualified based on laboratory reporting limits.

## Method Blank Analysis—Acceptable

Method blanks were analyzed at the required frequency. Method blanks did not contain levels of target analytes above the laboratory reporting limits.

## Laboratory Control Sample Analysis—Acceptable

Laboratory control samples were analyzed at the required frequency. The percent recovery values met the criteria established by the laboratory or specified method.

## Matrix Spike Analysis—Acceptable

Matrix spike samples were analyzed at the required frequency. The percent recovery values met the criteria established by the laboratory or specified method.

## Laboratory Duplicate Analysis—Acceptable

Laboratory duplicate samples were analyzed for total and dissolved iron; laboratory duplicate samples were also analyzed for TSS samples analyzed by ARI. The relative percent difference (RPD) values (ranging from 0.1 to 2.7 percent) met the control limits (less than 20 percent for metals, and less than 25 percent for TSS) established in the SAP.

## Field Duplicate Analysis—Not Analyzed

Field duplicates were not collected for this field effort.

# APPENDIX I

## Offsite Groundwater Well Logs

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

File: Orig. & First Copy - Dept of Ecology
Second Copy - Owner; Third Copy - Driller

# WATER WELL REPORT
State of Washington

Start Card No. A07782
Unique Well ID 1
Water Right Permit No.



(1) OWNER: Name CREST BUILDERS Address 5516 75TH ST W LAKEWOOD WA 98467
(2) LOCATION OF WELL: County PIERCE NE 1/4 SW 1/4 Sec 26 T 19 N R 3 E
(2a) STREET ADDRESS OF WELL (or nearest address) 17215 E 27TH AVE SPANAWAY WA

(3) PROPOSED USE: DECOMMISSION
(4) Type of work: ABANDONED
Method: ROTARY

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 0 feet. Depth of completed well 0 ft.

(6) CONSTRUCTION DETAILS:
Casing instld: " Diam. from ft. to ft.
Welded _ " Diam. from ft. to ft.
Liner _ " Diam. from ft. to ft.
Threaded _

Perforations: Yes _ No X
Type of perforator used
Size of perforations in. by in.
perforations from ft. to in.
perforations from ft. to in.
perforations from ft. to in.

Screens: Yes _ No X
Manufacturer's Name
Type Model No
Diam Slot size from ft. to ft.
Diam Slot size from ft. to ft.

Gravel packed: Yes _ No X Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes _ No X To what depth? ft.
Material used in seal
Did any strata contain unusable water? Yes _ No X
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type H.P. 0

(8) WATER LEVELS: Surface elev above mean sea level ft.
Static level ft. below top of well Date
Artesian pressure lbs. per sq. in. Date
Artesian pressure is controlled by

(9) WELL TESTS: Pump test made? ___ By whom?
Yield 0 gal./min. with ft. drawdown after hrs
Yield 0 gal./min. with ft. drawdown after hrs
Yield 0 gal./min. with ft. drawdown after hrs
Recovery data:

| Time | Wtr. Lvl. | Time | Wtr. Lvl. | Time | Wtr. Lvl. |
|---|---|---|---|---|---|
| | | | | | |

Date of test
Bailer test 0 gal/min with ft. drawdown after hr
Airtest 0 gal/min with stem set at ft. for hrs
Artesian flow 0 gal/min Date
Temperature of water Was chemical analysis made? NO

(10) WELL LOG or DECOMMISSIONING PROCEDURE DESCRIPTION

| Material | From | To |
|---|---|---|
| ABANDON WELL AS PER WAC 173-160-415 PARAGRAPH<br><br>PULLED 61' OF CASING FROM GROUND AND USED 20-50# BAGS OF MEDIAM CHIPS FROM BOTTOM TO TOP | | |

Work Started 08/06/97 Completed 08/06/97

WELL CONSTRUCTOR CERTIFICATION:
I constructed and/or accept responsibility for construction this well, and its compliance with all Washington well construction standards. Materials used and the information report above are true to my best knowledge and belief.
Name RICHARDSON WELL DRILLING
Address P.O. Box 44427 Tacoma WA 98444

(Signed) _____ Lic. No 2017
(Well Driller)
Contractor's Registration No. RICHAW*3210B Date 08/29/
Based on form ECL 050-1-20 (2/93)**f-1329~ by Speed Systems Co

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

# WATER WELL REPORT
## STATE OF WASHINGTON

Application No. .....
Permit No. .....

**(1) OWNER:** Name E. L. Milton Address 3109 176 St. E.

**(2) LOCATION OF WELL:** County Pierce — ¼ ¼ Sec. 26 T. 19N., R. 3 E W.M.
Bearing and distance from section or subdivision corner

**(3) PROPOSED USE:** Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

**(4) TYPE OF WORK:** Owner's number of well (if more than one) ....
New well ☐ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

**(5) DIMENSIONS:** Diameter of well 6 inches.
Drilled 47 ft. Depth of completed well 47 ft.

**(6) CONSTRUCTION DETAILS:**

**Casing installed:** ..." Diam. from ... ft. to ... ft.
Threaded ☐ ..." Diam. from ... ft. to ... ft.
Welded ☒ 6 " Diam. from 0 ft. to 47 ft.

**Perforations:** Yes ☐ No ☒
Type of perforator used
SIZE of perforations ... in. by ... in.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.

**Screens:** Yes ☐ No ☒
Manufacturer's Name
Type ... Model No.
Diam. ... Slot size ... from ... ft. to ... ft.
Diam. ... Slot size ... from ... ft. to ... ft.

**Gravel packed:** Yes ☐ No ☒ Size of gravel:
Gravel placed from ... ft. to ... ft.

**Surface seal:** Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal sand & bentonite mix
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

**(7) PUMP:** Manufacturer's Name Ruth Berry
Type: submersiable ½ H.P.

**(8) WATER LEVELS:** Land-surface elevation above mean sea level .... ft.
Static level 21 ft. below top of well Date
Artesian pressure ... lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

**(9) WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Western
Yield: 10 gal./min. with none ft. drawdown after 1 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

| Time | Water Level | Time | Water Level | Time | Water Level |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

Date of test 9-18-78
Bailer test 10 gal./min. with none ft. drawdown after 1 hrs.
Artesian flow ... g.p.m. Date
Temperature of water ... Was a chemical analysis made? Yes ☐ No ☐

**(10) WELL LOG:**

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

| MATERIAL | FROM | TO |
|---|---|---|
| surface soil | 0 | 5 |
| sandstone | 5 | 20 |
| sand | 20 | 30 |
| [illegible] - hardpan | 30 | 40 |
| course gravel (water) | 40 | 47 |

RECEIVED
JAN 10 1979
[illegible]

Work started 9-18-78, 19... Completed 9-21, 1978

**WELL DRILLER'S STATEMENT:**

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

NAME Western Well Drilling Company
(Person, firm, or corporation) (Type or print)

Address 8902 41st St. W. Tacoma, Wa. 98466

[Signed] Jack L McDonald
(Well Driller)

License No. 0283 Date 12-12, 1978

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71).

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

# WATER WELL REPORT
## STATE OF WASHINGTON

Application No. .....
Permit No. .....

**(1) OWNER:** Name E. L. Milton Address 3115 176th St. E.

**(2) LOCATION OF WELL:** County Pierce — ¼ ¼ Sec. 26 T. 19 N., R. 3-E W.M.

Bearing and distance from section or subdivision corner

**(3) PROPOSED USE:** Domestic XX Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

**(4) TYPE OF WORK:** Owner's number of well (if more than one) ....
New well ☐ Method: Dug ☐ Bored ☐
Deepened ☐ Cable XX Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

**(5) DIMENSIONS:** Diameter of well 6 inches.
Drilled 47 ft. Depth of completed well 47 ft.

**(6) CONSTRUCTION DETAILS:**

**Casing installed:** ..." Diam. from ... ft. to ... ft.
Threaded ☐ ..." Diam. from ... ft. to ... ft.
Welded XX 6 " Diam. from 0 ft. to 47 ft.

**Perforations:** Yes ☐ No XX
Type of perforator used
SIZE of perforations ... in. by ... in.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.

**Screens:** Yes ☐ No XX
Manufacturer's Name
Type Model No.
Diam. ... Slot size ... from ... ft. to ... ft.
Diam. ... Slot size ... from ... ft. to ... ft.

**Gravel packed:** Yes ☐ No XX Size of gravel:
Gravel placed from ... ft. to ... ft.

**Surface seal:** Yes XX No ☐ To what depth? 18 ft.
Material used in seal sand & bentonite mix
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

**(7) PUMP:** Manufacturer's Name Ruth Berry
Type: submersiable ½ H.P.

**(8) WATER LEVELS:** Land-surface elevation above mean sea level .... ft.
Static level 20 ft. below top of well Date
Artesian pressure ... lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

**(9) WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes XX No ☐ If yes, by whom? Western
Yield: 10 gal./min. with none ft. drawdown after 1 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

| Time | Water Level | Time | Water Level | Time | Water Level |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

Date of test 9-15-78
Bailer test 10 gal./min. with none ft. drawdown after 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☐

**(10) WELL LOG:**

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

| MATERIAL | FROM | TO |
|---|---|---|
| surface soil | 0 | 5 |
| sandstone | 5 | 20 |
| sand | 20 | 30 |
| hardpany | 30 | 40 |
| course gravel (water) | 40 | 47 |

RECEIVED
JAN 10 1979
DEPARTMENT OF ECOLOGY
SOUTHWEST REGIONAL OFFICE

Work started 9-12 19 78 Completed 9-15 19 78

**WELL DRILLER'S STATEMENT:**

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

NAME Western Well Drilling Company C-210
(Person, firm, or corporation) (Type or print)

Address 8902 41 St. W. Tacoma, Wa. 98466

[Signed] Jack L McDonald
(Well Driller)

License No. 0283 Date 12-12 19 78

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71).

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

.E: ORIG. & FIRST COPY - DEPT. OF ECOLOGY
SECOND COPY - OWNER; THIRD COPY - DRILLER

# WATER WELL REPORT
STATE OF WASHINGTON

START CARD NO. AE25436
UNIQUE WELL ID N/A
WATER RIGHT PERMIT NO N/A

(1) OWNER NAME: **BENJAMIN RYAN COMMUNITIES** ADDRESS: **20209 BRIDGEPORT WAY SW LAKEWOOD WA 98499**
(2) LOCATION OF WELL : County **PIERCE** **SW** 1/4 **NE** 1/4 SEC **26** TWP **19N** R **3E**
2a) STREET ADDRESS OF WELL (or nearest address): **16903 32ND AVE E TACOMA** **PARCEL 03192268030**

(3) PROPOSED USE: **ABANDONED**
(4) TYPE OF WORK: **DECOMMISSIONING**
METHOD: **PERFORATE / GROUT**

(5) DIMENSIONS: Diameter of well **6** inches.
Drilled feet. Depth of completed well ft.

(6) CONSTRUCTION DETAILS
Casing instld: " Diam. From ft. to ft.
Welded ☐ " Diam. From ft. to ft.
Liner ☑ " Diam. From ft. to ft.
Threaded ☑

Perforations: Yes ☑ No ☐
Type of perforator used **MILLS KNIFE**
Size of perforations 0.3 in. by 2 in.
184 perforations from 2 ft. to 48' in.
perforations from ft. to in.
perforations from ft. to in.

Screens: Yes ☐ No ☑
Manufacturer's Name:
Type Model No.
Diam Slot size from ft. to ft.
Diam Slot size from ft. to ft.

Gravel packed Yes ☐ No ☑ Size of gravel?
Gravel packed from ft. to ft.

Surface seal: Yes ☐ No ☐ To what depth? ft.
Material used in seal
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of Strata ft.
Method of sealling strata off

(7) PUMP: Manufacturer's Name
Type H. P.

(8) WATER LEVELS: Surface elev above mean sea level ft.
Static level below top of well Date
Artesian pressure lbs. Per sq. in. Date
Artesian pressure is controlled by

(9) WELL TESTS: Pump test made? By Whom
Yield gal./min with ft. drawdown after hrs.
Yield gal./min with ft. drawdown after hrs.
Yield gal./min with ft. drawdown after hrs.
Recovery data:
ne Wtr Lvl. Time Wtr Lvl. Time Wtr Lvl.

Date of test:
iler test gal./min with ft. drawdown after hrs.
test gal/min stem set at ft. for hrs.
esion flow gal/min Date
mperature of water Was chemical analysis made?

(10) WELL LOG OR DECOMMISSIONING PROCEDURE DESCRIPTION

| MATERIAL | FROM | TO |
|---|---|---|
| EXISTING WELL | | |
| DIAMETER - 6" STEEL | | |
| DEPTH 48' | | |
| DECOMMISSIONED PER TPCHD AND DOE REG'S | | |
| WAC 173-160-381-1A | | |
| PERFORATED CASING 4 CUTS PER ROW, ONE ROW | | |
| PER FOOT | | |
| TREMMIED 20% + BENTONITE QUICKGROUT FROM THE | | |
| BOTTOM TO TOP. | | |

RECEIVED
JUN 24 2015
WA State Department of Ecology (SWRO)

Work Started 06/10/15 Completed: 06/10/15

**WELL CONSTRUCTOR CERTIFICATION:**
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Name: **RICHARDSON WELL DRILLING COMPANY INC.**
Address: **P. O. BOX 44437 TACOMA, WA 98444**

(Signed) _____ Lic No. **2246**
(Well Driller)
Contractor's Registration No. **RICHAW*3210B** DATE **6/16/15**

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

# WATER WELL REPORT
**STATE OF WASHINGTON**

Application No. .....
Permit No. 02-26537 I

**(1) OWNER:** Name A.H. Schumacher Address 16004 - 38th Ave. E. 6

**(2) LOCATION OF WELL:** County Pierce SE ¼ NW ¼ Sec. 26 T. 19 N., R. 3 E W.M.

Bearing and distance from section or subdivision corner

**(3) PROPOSED USE:** Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

**(4) TYPE OF WORK:** Owner's number of well (if more than one) ....
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

**(5) DIMENSIONS:** Diameter of well 6" inches.
Drilled 120 ft. Depth of completed well 120 ft.

**(6) CONSTRUCTION DETAILS:**

**Casing installed:** 6" Diam. from 0 ft. to 120 ft.
Threaded ☐ ." Diam. from ft. to ft.
Welded ☒ ." Diam. from ft. to ft.

**Perforations:** Yes ☐ No ☒
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

**Screens:** Yes ☐ No ☒
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

**Gravel packed:** Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

**Surface seal:** Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

**(7) PUMP:** Manufacturer's Name
Type: H.P.

**(8) WATER LEVELS:** Land-surface elevation above mean sea level .... ft.
Static level 45 ft. below top of well Date 4-3-78
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

**(9) WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☒ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

| Time | Water Level | Time | Water Level | Time | Water Level |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

Date of test
Bailer test 100 gal./min. with 45 ft. drawdown after 1 hrs.
Artesian flow g.p.m. Date 4-3-78
Temperature of water Was a chemical analysis made? Yes ☐ No ☒

**(10) WELL LOG:**

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

| MATERIAL | FROM | TO |
|---|---|---|
| Topsoil | 0 | 3 |
| Hardpan | 3 | 45 |
| Sand Gravel & Water | 47 | 70 |
| Hardpan | 70 | 79 |
| Hardpan & Seepage | 79 | 105 |
| Sand, Gravel, Water | 105 | 120 |

Work started 4-3, 19 78. Completed 4-3, 19 78

**WELL DRILLER'S STATEMENT:**

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

NAME Tacoma Pump & Drilling Inc (Person, firm, or corporation) (Type or print)
Address 30316 mt Hiwan Graham
[Signed] Eric Hanson (Well Driller)
License No. 0710 Date APRIL 19, 19 78

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

# WATER WELL REPORT
**STATE OF WASHINGTON**

Application No. .....
Permit No. .....

**(1) OWNER:** Name Ben Wade Address 17016-32nd Ave. E. Tacoma, Wa. 98446

**(2) LOCATION OF WELL:** County Pierce — NW ¼ SE ¼ Sec. 26 T. 19 N., R. 3E W.M.

Bearing and distance from section or subdivision corner

**(3) PROPOSED USE:** Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

**(4) TYPE OF WORK:** Owner's number of well (if more than one) .... 1
New well ☐ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

**(5) DIMENSIONS:** Diameter of well 6 inches.
Drilled 80 ft. Depth of completed well 80 ft.

**(6) CONSTRUCTION DETAILS:**

**Casing installed:** 6 " Diam. from 0 ft. to 80 ft.
Threaded ☐ ..... " Diam. from ..... ft. to ..... ft.
Welded ☒ ..... " Diam. from ..... ft. to ..... ft.

**Perforations:** Yes ☐ No ☒
Type of perforator used .....
SIZE of perforations ..... in. by ..... in.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.

**Screens:** Yes ☐ No ☒
Manufacturer's Name .....
Type ..... Model No. .....
Diam. ..... Slot size ..... from ..... ft. to ..... ft.
Diam. ..... Slot size ..... from ..... ft. to ..... ft.

**Gravel packed:** Yes ☐ No ☒ Size of gravel: .....
Gravel placed from ..... ft. to ..... ft.

**Surface seal:** Yes ☐ No ☐ To what depth? ..... ft.
Material used in seal .....
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ..... Depth of strata .....
Method of sealing strata off .....

**(7) PUMP:** Manufacturer's Name .....
Type: ..... H.P. .....

**(8) WATER LEVELS:** Land-surface elevation above mean sea level .... ft.
Static level 31 ft. below top of well Date 9-30-58
Artesian pressure ..... lbs. per square inch Date .....
Artesian water is controlled by ..... (Cap, valve, etc.)

**(9) WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? .....
Yield: 15 gal./min. with 10 ft. drawdown after 4 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

| Time | Water Level | Time | Water Level | Time | Water Level |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

Date of test 9-30-58
Bailer test ..... gal./min. with ..... ft. drawdown after ..... hrs.
Artesian flow ..... g.p.m. Date .....
Temperature of water ..... Was a chemical analysis made? Yes ☐ No ☐

**(10) WELL LOG:**

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

| MATERIAL | FROM | TO |
|---|---|---|
| Clay & gravel | 0 | 13 |
| Hardpan | 13 | 42 |
| Clay & gravel seepage (42') | 42 | 43 |
| Hardpan | 43 | 73 |
| Sand | 73 | 74 |
| Hardpan | 74 | 79 |
| Gravel & coarse sand | 79 | 80 |

RECEIVED
OCT 10 AM 8:57
STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
OFFICE

Work started 9-24 19 58 Completed 9-30 19 58

**WELL DRILLER'S STATEMENT:**

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

NAME Richardson Well Drilling Co. (Person, firm, or corporation) (Type or print)

Address P.O. Box 44427 Tacoma, Wa. 98444

[Signed] ..... (Well Driller)

License No. 0419 Date 5-6 19 85

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20