

Updated Phase II Environmental Assessment Report

Highway 101 Former Mill Site
West of the Intersection at Marine Drive, Wheeler, Oregon 97147
Cooperative Agreement No. 02J20601; ACRES ID 257735

Prepared for

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Acronyms and Abbreviations

Apex	Apex Analytical Laboratory
bgs	below ground surface
CHA	CHA Consulting, Inc.
ESA	environmental site assessment
HOT	heating oil tank
mg/kg	milligrams per kilogram
ODEQ	Oregon Department of Environmental Quality
Pacific Geophysics	Pacific Geophysics, Inc., of Portland, Oregon
PAHs	polycyclic aromatic hydrocarbons
Parametrix	Parametrix, Inc.
PCBs	polychlorinated biphenyls
PCP	pentachlorophenol
pg/g	picograms per gram
PID	photoionization detector
ppm	parts per million
QA	quality assurance
QAPP	<i>Generic Quality Assurance Project Plan for Brownfield Community-Wide Assessment</i>
QC	quality control
RBC	risk-based concentration
RCRA	Resource Conservation and Recovery Act
Site	property located on U.S. Highway 101, west of the intersection at Marine Drive, Wheeler, Oregon 97141
SSQAPP	<i>Site-Specific Quality Assurance Project Plan</i>
Terraphase	Terraphase Engineering Inc.
TEQ	total toxic equivalency
TPH	total petroleum hydrocarbons
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound



Signatures



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01/29/2025

Date



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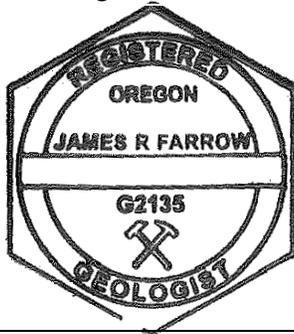
01/29/2025

Date

All geologic information, conclusions, and recommendations in this document have been prepared under the responsible charge of an Oregon State Professional Geologist.



James R. Farrow, RG
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01/29/2025

Date



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01/29/2025

Date

1 Introduction

Terraphase Engineering Inc. (Terraphase) has completed this updated Phase II environmental site assessment (ESA) on behalf of Tillamook County under contract with CHA Consulting, Inc. (CHA) for the property located on U.S. Highway 101, west of the intersection at Marine Drive in Wheeler, Oregon (Site; Figure 1). Updates were made to the original Phase II ESA dated July 11, 2024, based on comments provided by the Oregon Department of Environmental Quality (ODEQ) in a letter dated October 2, 2024. The Site is an approximately 7.79-acre property identified as Tillamook County Assessor's tax lot numbers 2N1002BB00300, 2N1002BB00301, 2N1002BB00400, 2N1002BC04700, and 2N1002BC04800. The Phase II ESA was conducted to assess environmental conditions at the Site in advance of property redevelopment. The scope of work for Phase II ESA activities was based on the findings of Terraphase's November 2023 Phase I ESA for the Site. All field work was conducted in accordance with the United States Environmental Protection Agency (USEPA)-approved *Generic Quality Assurance Project Plan for Brownfield Community-Wide Assessment* (QAPP [CHA 2023]) and the *Site-Specific Quality Assurance Project Plan* (SSQAPP [CHA 2024]).

1.1 Background

The Wheeler Lumber Company or associated lumber structures were present on the subject property from at least the 1920s through the 1950s or 1960s. The facility was primarily a sawmill/shingle mill and consisted of a dry kiln, planer, machine shop, conveyor line, burn pit, and other associated operations. Facility operations may have extended into the adjacent Nehalem River, as indicated by the presence of remaining wood pilings in the river and former structure foundations along the river (Terraphase 2023). It was not reported when operations ceased; however, by 1970, most structures were demolished, and the property graded. The Site has been primarily vacant for the last 40 years. However, the southern portion of the property has been used to store miscellaneous equipment or vehicles and the northern portion has been accessed by the public in recent years, primarily for temporary parking/access to the river.

Previous environmental investigations at the Site include the following:

- Phase I ESA conducted by Parametrix, Inc. (Parametrix) in 2016
- Phase II ESA conducted by Parametrix in 2017
- Phase I ESA conducted by Terraphase in October 2023

The 2016 Phase I ESA did not identify any recognized environmental conditions at the Site or adjacent properties (Parametrix 2016). Although the use and storage of chemicals, oils, or other hazardous substances used at the facility is unknown, they are presumed to have occurred in some capacity similar to other known sawmill/shingle mill facilities, which primarily use petroleum-based products (lube or cutting oils, fuel, etc.).

During the 2017 Phase II ESA, Parametrix supervised the drilling of 20 exploratory borings to 10 to 15 feet below ground surface (bgs). Thirty-one soil samples were analyzed for one or more target compounds, including total petroleum hydrocarbons (TPH) as diesel, polycyclic aromatic hydrocarbons



(PAHs), volatile organic compounds (VOCs), the eight Resource Conservation and Recovery Act (RCRA) monitored metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), and dioxins/furans. TPH as diesel was detected in soil in the northern portion of the Site. TPH as oil, and several PAHs, were detected in soils in the central portion of the Site, with concentrations of benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene exceeding ODEQ residential scenario risk-based concentrations (RBCs) for the soil ingestion, dermal contact, and inhalation pathway. Arsenic was also detected in soils at concentrations exceeding the ODEQ residential and occupational scenario RBCs for the soil ingestion, dermal contact, and inhalation pathway across the Site.

TPH as diesel was also detected at concentrations exceeding the ODEQ residential scenario RBC for the ingestion and inhalation from tap water pathway in groundwater samples collected from the northern and central portions of the Site. PAHs were detected at concentrations exceeding the ODEQ residential scenario RBC for the ingestion and inhalation from tap water pathway in the one groundwater sample collected at the northern portion of the Site. Concentrations of RCRA monitored metals were detected in all groundwater samples, with lead concentrations exceeding the ODEQ residential scenario RBC for the ingestion and inhalation from tap water pathway in several groundwater samples. Barium and silver were detected at concentrations exceeding the ODEQ surface water ecological screening level but below the ODEQ residential scenario RBCs. Parametrix indicated that the likely source of groundwater impacts was the former lumber operations. Analytical data from Parametrix's 2017 Phase II ESA is included in Tables 1 and 4, and sample locations are shown on Figure 2.

During the 2023 Phase I ESA, Terraphase identified the following environmental concerns on the Site warranting further investigation:

- **Former Saw/Shingle Mill Operations:** The presence of previously documented soil and groundwater contamination at the Site was considered a recognized environmental condition. The lateral extent of impacted soil and groundwater had not been delineated. Contaminants of concern include PAHs and TPH.
- **Riverbank Sediment:** The quality of the riverbank sediment along the western portion of the Site had not been investigated and was considered a data gap. Facility operations may have extended into the adjacent Nehalem River, as indicated by the presence of remaining wood pilings in the river and former structure foundations along the river. Potential contaminants of concern include PAHs and TPH.
- **Possible heating oil tanks (HOTs):** The potential presence of HOTs or other underground storage tanks (USTs) associated with the past offices and a residence on the Site was considered an environmental concern. Potential contaminants of concern include TPH.

The Site was added to the ODEQ Voluntary Cleanup Program on January 9, 2024 (ODEQ Environmental Cleanup Site Inventory ID 6581). A copy of the associated agreement letter is included as Appendix A.

1.2 Objective

The objective of the Phase II ESA was to investigate the following environmental conditions and data gaps:



- The lateral extent of impacted soil and groundwater has not been delineated. Additional sampling and analysis were conducted to determine if additional remedial actions are needed to meet ODEQ human health soil and groundwater RBCs for the future planned Site use.
- The extent and presence of the contaminants of concern in the Nehalem riverbank sediment is unknown. Sampling and analysis were conducted to determine if additional remedial actions are needed to meet ODEQ human health and ecological soil RBCs for the future planned Site use.
- The presence of HOTs and USTs is suspected due to the historical presence of offices and a residence at the Site. A geophysical survey was conducted to determine the potential presence of HOTs and USTs so additional sampling could be performed to determine the presence and extent of contamination.

The end goal of delineating the extent and presence of contamination is to facilitate the future development at the Site in compliance with OAR 340-122.¹

1.3 Site Description

The Site is situated west of the intersection of Highway 101 and Marine Drive in Wheeler, Oregon. The Site is an undeveloped, vacant property formerly utilized as a saw/shingle mill, which consisted of a dry kiln, planer, machine shop, conveyor line, burn pit, and other associated structures adjacent to the Nehalem River (Figure 2).

1.4 Site Property Setting

The Site is situated approximately 8 feet above mean sea level. The local topography gradually slopes to the west and north in the general direction of the Nehalem River, located immediately west of the Site.

Currently, the Site is undeveloped and vegetated with trees, grasses, and brambles. All former mill-related buildings and other structures have been removed. However, concrete and asphalt slabs, driveways, and debris associated with the former buildings are present. A railway is present east of the Site.

1.5 Geology and Hydrogeology

Based on information accessed via the United States Geological Survey website,² the Site is underlain by Quaternary fluvial and estuarine deposits, which consist of unconsolidated, alluvial clay, silt, sand, and gravel, as well as tidal flat mud, sand, and peat (Wells et al. 1994). According to soil data accessed on the U.S. Department of Agriculture Natural Resources Conservation Service soil survey website³ and *The EDR® Radius Map™ Report with GeoCheck®* (included as Appendix B in Terraphase’s 2023 Phase I ESA),

¹ “Division 122 Hazardous Substance Remedial Action Rules,” OAR 340-122, https://oregon.public.law/rules/oar_chapter_340_division_122.

² <https://ngmdb.usgs.gov/mapview>

³ <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>



the soils at the Site primarily consist of sandy loams, which are generally moderately to excessively drained. Soil encountered in borings advanced on the Site during a Phase II ESA completed by Parametrix in 2017 generally consisted of sandy gravel, interpreted as fill, to a depth of 3 to 6 feet bgs, underlain by sand and silt to 10 feet bgs, the maximum depths explored. Soils encountered during the Phase II in 2024 are described in Section 3.2 of this report.

Based on review of well logs available on the Oregon Water Resources Department website for wells located in the vicinity of the Site, groundwater levels in the area generally range from 3 to 10 feet bgs, and likely flows west to southwest toward the adjacent Nehalem River. Based on this proximity, groundwater levels and flow direction are likely tidally influenced.

2 Scope of Work

This Phase II ESA was conducted between May 21 and May 24, 2024. The scope of the Phase II ESA is described below.

2.1 Pre-Field Work

Terraphase prepared a site-specific *Health and Safety Plan (2024)*. The *Health and Safety Plan* specifies personal protective equipment and procedures for the sampling work. Terraphase contacted Oregon One-Call on May 15, 2024, to identify the location of underground public utilities within the vicinity of the proposed boring locations. As an additional precaution, Terraphase contracted Pacific Geophysics, Inc. of Portland, Oregon (Pacific Geophysics), to identify underground private utilities prior to drilling.

2.2 Geophysical Survey

On May 15, 2024, a geophysical survey was conducted by Pacific Geophysics, Inc. using ground penetrating radar and an electromagnetic metal detector to identify buried metal objects that might include HOTs (or other USTs) and/or tank excavation cavities in the vicinity of past offices on the central and southern portions of the Site and a residence on the central eastern property boundary. The geophysical survey report is included in Appendix B.

2.3 Soil and Groundwater Sampling

The following subsections describe soil and groundwater sample collection procedures.

2.3.1 Soil Boring Sampling

Between May 21 and May 22, 2024, Terraphase supervised Holocene Drilling Inc. of Puyallup, Washington, in the advancement of 10 soil borings at the Site (WS-SB-1 through WS-SB-10) to depths of 10 to 20 feet bgs using a track-mounted, direct-push drilling rig. Borings were advanced in the areas of the former shingle mill and lumber yard on the central and northern portions of the Site (Figure 2). Soil boring logs are included in Appendix C.



The direct-push rig was equipped with a hydraulic ram and percussion hammer to push a 5-foot-long, stainless-steel core barrel sampler into the subsurface to retrieve continuous soil cores. The core barrel contained an acetate sleeve liner. Once the core barrel was extracted from the ground, the liner was removed and cut open with a stainless-steel blade. No air, mud, or water was introduced during the drilling process.

Continuous soil samples were examined in the field under the supervision of a Terraphase Oregon State Registered Geologist. The soil was described in general accordance with Unified Soil Classification System nomenclature and recorded on soil boring logs (Appendix C). The soil was screened in the field for visible (e.g., staining, sheen) or olfactory indications of contamination, and a photoionization detector (PID) was used to monitor for the presence of VOCs. The PID was calibrated using isobutylene prior to daily use. Soil samples retained for chemical analysis were selected based on field evidence of contamination (visual, olfactory, PID results). However, where contamination was not evident, composite soil samples (approximately 6-inch intervals) were generally retained between 0 to 5 and 5 to 10 feet bgs, depending on sample recovery.

Samples retained for chemical analysis were transferred from the plastic sleeves to laboratory-supplied sample containers using clean, new nitrile gloves. Samples collected for analysis of TPH as gasoline were placed in hermetically sealed glass vials containing methanol for sample preservation in accordance with USEPA Method 5035. Each sample collected for chemical analysis was labeled with the borehole number, sample depth, and time and date of collection. Sample containers were placed in resealable plastic bags within an ice-chilled cooler immediately following collection and were shipped to Apex Analytical Laboratory (Apex) of Tigard, Oregon, via United Postal Service (UPS), under chain-of-custody procedures. Soil samples were analyzed for the following:

- TPH in accordance with NWTPH-HCID;
- TPH quantification by NWTPH-Gx or NWTPH-Dx, with acid/silica gel cleanup, depending on the results of the NWTPH-HCID analysis;
- PAHs including pentachlorophenol (PCP) in accordance with USEPA Method 8270E; and
- The sample collected from WS-SB-09 at 0 to 3.5 feet bgs, one of two samples with the highest TPH concentrations, was analyzed for polychlorinated biphenyls (PCBs) using USEPA Method 8082.

2.3.2 Riverbank Sediment Sampling

Six sediment samples were collected from three locations along the riverbank from depths of 0 to 1 and 2 to 3 feet bgs (WS-RS-1 through WS-RS-3) using a hand auger at low tide (Figure 2). The sediment sample locations were selected to represent likely discharge points for dissolved contaminants identified in the 2017 Phase II ESA. Field notes including descriptions of soil encountered in these areas are provided as Appendix D. The soil was screened in the field for visible (e.g., staining, sheen) or olfactory indications of contamination.

Samples retained for chemical analysis were transferred from the trowels to laboratory-supplied glass containers using clean, new nitrile gloves. Each sample collected for chemical analysis was labeled with the sample number, sample depth, and time and date of collection. Sample containers were placed in



resealable plastic bags within an ice-chilled cooler immediately following collection and were shipped to Apex, via UPS, under chain-of-custody procedures. Soil samples were analyzed for the following:

- TPH in accordance with NWTPH-HCID;
- TPH quantification by NWTPH-Gx or NWTPH-Dx, with acid/silica gel cleanup, depending on the results of the NWTPH-HCID analysis;
- PAHs including PCP in accordance with USEPA Method 8270E;
- RCRA monitored metals in accordance with USEPA 6020B; and
- The sample collected from WS-RS-02 at 2 to 3 feet bgs, one of two samples with the highest TPH concentrations, was analyzed for PCBs using USEPA Method 8082.

2.3.3 Former Burn Pit Incremental Soil Sample Collection

A primary, a duplicate, and a triplicate composite surface soil sample (WS-IMS-0-0.5, WS-IMS-0-0.5-DUP, and WS-IMS-0-0.5-TRP, respectively), each comprising 30 subsamples, were collected in the area of the former burn pit in the central portion of the Site using dedicated trowels (Figure 2). In accordance with ODEQ-approved methodologies (ODEQ 2020), the area of the burn pit was divided into 30 equal subareas. Thirty evenly spaced soil subsamples, one from each subarea, were collected from 0 to 0.5 foot bgs (WS-IMS-0-0.5); 30 milliliters of each subsample, representing a mass of approximately 1.5 kilograms, were collected using a dedicated syringe and composited. All sample locations were determined by a random number generator to establish a systematic random sampling grid. Each primary subsample was collected 8.3 feet east and 6.0 feet north from the southwest corner of each subarea. Field duplicate and triplicate subsamples (WS-IMS-0-0.5-DUP and WS-IMS-0-0.5-TRP, respectively) were collected at specific distances from each primary subsample (7.16 feet west and 3.0 feet north and 3.5 feet west and 5.0 feet south, respectively). Field notes including descriptions of soils encountered in these areas are provided as Appendix D. The soil was screened in the field for visible (e.g., staining, sheen) or olfactory indications of contamination.

Samples retained for chemical analysis were transferred from the trowels to laboratory-supplied glass containers using clean, new nitrile gloves. Each sample collected for chemical analysis was labeled with the sample name, sample depth, and time and date of collection. Sample containers were placed in resealable plastic bags within an ice-chilled cooler immediately following collection and were shipped to Apex, via UPS, under chain-of-custody procedures. The three composite soil samples (one primary, one duplicate, one triplicate) were analyzed for dioxins and furans using USEPA Method 1613B.

2.3.4 Groundwater Sample Collection

Upon reaching the final depth in borings WS-SB-1 through WS-SB-9, a dedicated, temporary, 1-inch-diameter PVC well with a 0.010-inch factory-slotted screen was placed in each well for groundwater sample collection. The temporary wells had 5- to 10-foot screened intervals at variable depths between 5 and 20 feet bgs. Groundwater sampling forms are included in Appendix D.

A post-drilling static water level measurement was recorded before sampling using a clean electronic sounder. Low-flow purging techniques were used for groundwater sampling. A Horiba multi-parameter



meter with a flow-through cell was used to measure groundwater parameters including pH, temperature, electrical conductivity, dissolved oxygen, oxidation reduction potential, and turbidity. The multi-parameter meter was calibrated using supplier-provided standard calibration solutions prior to use. Groundwater level and parameter readings were collected at least every 5 minutes during purging. Once parameters stabilized, a grab-groundwater sample was collected from the temporary well through dedicated 3/8-inch, low-density polyethylene tubing using a peristaltic pump. For locations in which the wells were rapidly dewatered, grab samples were collected in lieu of low-flow samples. Groundwater was transferred directly from the disposable tubing into laboratory-supplied containers. Groundwater samples analyzed for dissolved metals were filtered in the field using disposable 0.45 micrometer filters. Sample containers were labeled, logged on a chain-of-custody form, placed in resealable plastic bags, stored in an ice-chilled cooler, and shipped to Apex, via UPS, under chain-of-custody procedures. The groundwater samples were analyzed for the following:

- TPH in accordance with NWTPH-HCID;
- TPH quantification using NWTPH-Gx or NWTPH-Dx, depending on the results of the NWTPH-HCID analysis;
- PAHs, including PCP, in accordance with USEPA Method 8270E; and
- RCRA monitored metals in accordance with USEPA 6020B.

2.3.5 Equipment Decontamination and Quality Assurance/Quality Control

Decontamination of non-disposable sampling and downhole drilling equipment was completed between each sampling location to prevent the introduction of extraneous material into samples and potential cross-contamination as a quality assurance (QA)/quality control (QC) measure. Downhole drilling equipment and non-disposable sampling equipment (the electronic sounder) were decontaminated on-site by washing with a non-phosphate detergent.

An equipment blank was collected for each day of field work following decontamination of the direct-push downhole tooling by pouring laboratory-supplied deionized water across the drilling shoe directly into laboratory-supplied sample bottles. An equipment blank was also collected following decontamination of the hand auger used for riverbank sediment sampling. Equipment blank samples consist of reagent water collected from a rinse of sampling equipment after the decontamination procedure has been performed. The purpose of equipment blank samples is to confirm the effectiveness of equipment decontamination procedures in place to minimize cross contamination between sample collection. The samples were shipped to Apex under standard chain-of-custody procedures and analyzed for the same constituents as the soil samples.

One field duplicate sample was collected for each sample matrix (soil, sediment, and groundwater) and within each area of concern and submitted for the same analyses as the corresponding primary samples. Duplicate samples provide data to assess precision of the field sampling procedure and contract laboratory. However, variability in field duplicate sample results can be an indicator of matrix variability and heterogeneity. The soil field duplicate sample was collected from boring WS-SB-1. The sediment duplicate sample was collected from sample location WS-RS-2. The groundwater field duplicate sample



was collected from boring WS-SB-3. Field duplicate and triplicate samples (WS-IMS-0-0.5-DUP and WS-IMS-0-0.5-TRP, respectively) were collected for the composite soil sample from the burn pit, in accordance with incremental sampling methodology (ODEQ 2020).

2.4 Borehole Abandonment

After sample collection, the temporary wells were removed, and the boreholes were backfilled with bentonite chips to 1 foot bgs. The upper 1 foot of each borehole was filled with soil to match the surrounding ground surface.

2.5 Investigation-Derived Waste

Investigation-derived waste consisting of soil cuttings and decontamination water was temporarily stored in a 55-gallon drum. The drum was labeled with its contents and Terraphase's contact information.

On July 24, 2024, ACT Enviro of Clackamas, Oregon, hauled the drum for appropriate disposal as non-hazardous waste at Waste Management's Hillsboro, Oregon landfill in compliance with ODEQ/USEPA requirements.

3 Results

This section summarizes the results of the field investigation.

3.1 Geophysical Survey

No suspicious magnetic anomalies were identified during the geophysical survey at the former office areas on the central and southern portions of the Site. Six magnetic anomalies were detected at the location of the former residence along the east-central portion of the Site. Five of the six anomalies were found to be due to either the railroad tracks or a metal plate visible at the surface. The sixth anomaly identified a 3D object to the south of the survey extent. The object did not resemble a UST and was considered potentially representative of buried construction debris. Details on the geophysical survey results are presented in Appendix B.

3.2 Lithology and Field Observations

Encountered lithology within the borings generally consisted of sand, silty sand, sandy silt, or silt with sand and gravel from 3 to 11.5 feet bgs underlain by elastic silt or fat clay with abundant organics and variable amounts of sand. A typically thick layer of well-graded silty gravel was encountered above the elastic silt or fat clay in borings WS-SB-2, WS-SB-4, WS-SB-5, and WS-SB-10 at 4 to 11.5 feet bgs. Well-graded sandy, clayey, or silty gravel was observed from the surface to 8.5 feet bgs in borings within gravel-surfaced roadways (WS-SB-1, WS-SB-6, and WS-SB-7), as well as borings WS-SB-8 and WS-SB-9.



Soils encountered are consistent with the fluvial and estuarine deposits mapped at the Site (Wells et al. 1994).

Groundwater was encountered between 5.66 and 16.5 feet bgs, with post-drilling static water levels between 6.80 and 16.92 feet bgs. Groundwater was shallowest (encountered at 5.66 to 7.06 feet bgs) at borings WS-SB-1 and WS-SB-6 through WS-SB-10, which are near wetland areas to the north and within the central portion of the Site.

PID measurements were generally taken in 1-foot intervals, depending on sample recovery. PID measurements in boring WS-SB-1 ranged from 0.4 to 3.9 parts per million (ppm) between 1 and 11 feet bgs, with a maximum PID reading at 7 feet bgs. PID measurements in borings WS-SB-2 through WS-SB-4, WS-SB-6, and WS-SB-8 through WS-SB-10 were 0.0 ppm. PID measurements in borings WS-SB-5 and WS-SB-7 were 0.1 ppm from 17 to 20 and 6.5 to 10 feet bgs, respectively. No visual or olfactory evidence of contamination was observed. Lithology, encountered groundwater, and PID measurements are recorded on the boring logs (Appendix C).

Riverbank sediment generally consisted of silt or silty sand with abundant woody, organic material and some gravel. A sheen was observed within ponded surface water near sediment sample WS-RS-1, likely due to naturally occurring organics.

3.3 Soil and Sediment Results

Analytical results from the soil borings, sediment, and surface soil sampling are presented in Tables 1 through 3, respectively. Soil sampling results for TPH and PAH analysis are shown on Figures 3 and 4, respectively. Sediment sampling results are shown on Figure 5. The complete laboratory analytical reports including chains-of-custody are included as Appendix E. The following subsections describe detected compounds. A discussion of screening levels and exceedances is provided in Section 6.

3.3.1 Former Shingle Mill and Lumber Yard (Soil Boring Samples)

PAHs: The PAHs benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-c,d)pyrene, naphthalene, phenanthrene, and pyrene were detected above laboratory reporting limits in one or more soil samples, with most detections in samples collected from borings WS-SB-06, WS-SB-09, and WS-SB-10 in the central and northwestern-most portions of the Site.

TPH: TPH as motor oil was detected above laboratory reporting limits in samples collected from borings WS-SB-06 and WS-SB-09 in the central portion of the Site 5 to 8.5 and 0 to 3.5 feet bgs, respectively. Both detections were flagged by the laboratory as not representing a fuel pattern and therefore might be of natural biogenic origin. No TPH as gasoline or diesel was detected in any of the soil samples collected.

PCBs: PCBs were not detected above laboratory reporting limits. Several reporting limits were above respective ODEQ clean fill screening levels; however, this is not considered significant as there is no reported use or source of PCBs associated with the Site.



3.3.2 Riverbank (Sediment Samples)

Metals: Arsenic, barium, chromium, copper, and lead were detected above laboratory reporting limits in all riverbank sediment samples.

PAHs: The PAHs benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, indeno(1,2,3-c,d)pyrene, phenanthrene, and pyrene were detected above laboratory reporting limits in one or more soil samples, with most detections in samples collected from the surface, at 0 to 1 foot bgs.

TPH: TPH as motor oil was detected above laboratory reporting limits in the sample collected from WS-RS-2 from 2 to 3 feet bgs at a concentration of 145 milligrams per kilogram (mg/kg).

PCBs: PCBs were not detected above laboratory reporting limits. Several reporting limits were above respective ODEQ clean fill screening levels; however, this is not considered significant as there is no reported use or source of PCBs associated with the Site.

3.3.3 Former Burn Pit (Incremental Surface Soil Samples):

Dioxins/furans: The dioxins and furans 1,2,3,4,6,7,8,9-OCDD, 1,2,3,4,6,7,8,9-OCDF, 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,6,7,8-HxCDD, 2,3,7,8-TCDD, and 2,3,7,8-TCDF were detected above laboratory reporting limits. Concentrations of 2,3,7,8-TCDD were 2.11, 2.23, and 2.15 picograms per gram (pg/g) in the primary, duplicate, and triplicate samples, respectively. Total toxic equivalency (TEQ) values of 2.35, 3.59, and 2.83 pg/g were calculated using 2005 multipliers (World Health Organization 2006) for the primary, duplicate, and triplicate samples, respectively.

3.4 Groundwater

Analytical results from the groundwater samples are presented in Table 4 and on where detected concentrations exceed regulatory criteria on Figures 6 and 7. The complete laboratory analytical reports including chains-of-custody are included as Appendix E. A summary of the groundwater sampling results is provided below:

- **Metals:** Arsenic, barium, chromium, and selenium were detected above laboratory reporting limits in one or more groundwater samples.
- **PAHs:** The PAHs 1-methylnaphthalene, acenaphthene, anthracene, fluorene, naphthalene, phenanthrene, and pyrene were detected above laboratory reporting limits in the groundwater sample collected from boring WS-SB-5 within the former lumber yard. Pyrene was detected in the groundwater sample collected from boring WS-SB-2, also located within the former lumber yard.
- **TPHs:** TPHs as gasoline and diesel were detected above laboratory reporting limits in the groundwater sample collected from boring WS-SB-6 at concentrations of 173 and 304 micrograms per liter, respectively. Detections of TPH as gasoline and diesel were flagged by the laboratory as not representing a fuel pattern and therefore may be of natural biogenic origin. TPH as motor oil was not detected above laboratory reporting limits in any of the samples collected.



3.5 QA/QC Results

The laboratory analyses were reviewed by Terraphase as a check of overall quality in accordance with the QAPP and SSQAPP (CHA 2024). The data quality check process included a review of chain-of-custody forms, holding times, laboratory analytical reports, method blanks, surrogate recoveries, matrix spike, matrix spike duplicates, and method detection limits. The laboratory data validation reports are included as Appendix F. The Terraphase project manager reviewed all field notes and forms to ensure adherence to field data collection protocols. QA/QC information to note includes the following:

- Field data collection procedures and documentation were consistent with the QAPP and SSQAPP and suitable for decision making.
- All laboratory data are considered usable and support the Phase II ESA objectives.
- Several laboratory flags related to laboratory QC issues were reported. Flags are included in the tables and discussed in the data validation reports (Appendix F). The following flags were applied to hydrocarbon data, which suggest very degraded fuel and/or interference from biogenic sources:
 - F-03 – The result for this hydrocarbon range is elevated due to individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported (WS-SB-9-0.0-3.5, WS-SB-6-5.0-8.5, WS-RS-1-0-1, WS-RS-3-0-1, WS-SB-6-GW-10-15).
 - F-09 – Results in the gasoline range are impacted by the overlap of a heavier fuel hydrocarbon product (WS-SB-5-GW-10-20).
 - F-11 – The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component (WS-SB-5-GW-10-20).
 - F-13- The chromatographic pattern does not resemble the fuel standard used for quantitation (WS-SB-6-10-15).
 - F-17 – No fuel pattern detected. The diesel result represents carbon range C10 to C25, and the oil result represents C25 to C40 (WS-SB-6-GW-10-15).
- Relative percent differences for PAH compounds between the primary and duplicate sample WS-RS-2-0-1 ranged from 159 to 171 percent, which is outside the target range of plus or minus 50 percent for soil/sediment samples.
- No compounds were detected in the equipment blank.

3.6 Deviations from Work Plan

Deviations from the SSQAPP are as follows:

- A portion of the planned geophysical survey footprint at the location of the former residence along the eastern portion of the Site could not be completed due to the presence of thick vegetation. The residences are depicted within 50 feet of the railroad on the Sanborn® insurance maps and the survey included this portion of the planned area; therefore, this is not considered significant.
- The SSQAPP proposed collecting soil samples from depths of 0–5 and 5–10 feet bgs. Due to sample recovery limitations, samples were generally collected from smaller depth ranges within these intervals (i.e., 0-3, 5-7, etc.).



4 Beneficial Water Use Determination

Terraphase conducted a streamlined beneficial water use determination in general accordance with state guidance (ODEQ 2017) to assess groundwater use at the Site. For purposes of the beneficial use determination, the locality of the facility is considered the Site.

4.1.1 Drinking Water Supply

The city of Wheeler supplies water to the Site and surrounding area. The water is sourced from drinking water wells along the north bank of the Nehalem River, approximately 3 miles east of Wheeler and the Site. The city of Wheeler contributes financially to the system, but the city of Manzanita owns and operates it. The wells are approximately 60 feet deep and screened from 40 to 60 feet (Pace Engineering, Inc. 2015).

4.1.2 Well Survey

Terraphase conducted a search for water-supply wells located within a 1-mile radius of the Site using the Oregon Water Resource Department's online well query tool.⁴ Six wells were listed with depths between 39 and 400 feet bgs. The wells are more than 0.25 miles from the Site, were installed between 1967 and 2018, and are listed as domestic (Figure 1; Appendix G). Each well has a surface seal between 23 and 50 feet thick. One well log for a well approximately 3,000 feet north of the Site does not describe a well seal.

Based on distance from the Site and surface seal construction, none of the wells identified are likely to be in hydrologic communication with shallow tidally influenced groundwater beneath the Site.

4.1.3 Water Rights

According to the Oregon Water Resources Department's Water Rights Information page,⁵ water rights are held by Minnie Parks (Domestic), Vern Scovell (Industrial and Manufacturing) and H.A. Bell (Industrial and Manufacturing), with points of diversion along Zimmerman Creek northeast of the Site. The city of Wheeler holds water rights with points of diversion along Gervais Creek south of the Site. The point of use for the water right held by Vern Scovell includes industrial use at the Site. Golden West Dairy Farm holds an irrigation water right that includes diversion from the Nehalem River to Nehalem Bay, mapped as beginning approximately 1,500 feet upstream (north) of the Site. Similarly, the Oregon Water Resources Department holds six instream water rights in the Nehalem River that end at the same point (the beginning of Nehalem Bay).

⁴ https://apps.wrd.state.or.us/apps/gw/wl_well_report_map/Default.aspx

⁵ https://apps.wrd.state.or.us/apps/gis/wr/Default.aspx?snp_id=61633



4.1.4 Development Trends and Patterns

Residential development on the hills of Wheeler was active prior to the 2008 recession and was considered likely to resume once the economy recovered (Pace Engineering, Inc. 2015). The current population is approximately 450 people;⁶ the project population will be approximately 496 by 2034 (Pace Engineering, Inc. 2015). Current land use includes commercial and residential development along and east of Highway 101, respectively.

4.1.5 Surface Water Recharge

The Site is adjacent to the Nehalem River and shallow groundwater likely discharges to the river. Zimmerman Creek flows into Bott's Marsh, approximately 50 feet north of the Site. The Nehalem River is brackish at the Site, with salinity between 6 and 21 parts per thousand and increasing downstream (OAR 141-85-264).⁷ Based on salinity, it is unlikely the Nehalem River is used as a drinking water source downstream of the Site. No water rights points of diversion are depicted between the Site and the mouth of the river.

4.1.6 Water Quality and Quantity

Based on the proximity of the Site to the Nehalem River, shallowest groundwater is likely in hydrologic communication with brackish river water and may be tidally influenced. This could be deleterious to water quality and cause potential drinking water safety concerns (i.e. upstream spills to surface water, potential brackish water). Four of the nine sampling locations dewatered during low-flow sampling at pumping rates of approximately 200 milliliters per minute (0.05 gallons per minute), which is less than could be put to productive beneficial use, if desired. This is consistent with the observation of organic-rich silts and clay, which would not be expected to be transmissive.

4.1.7 Summary

Terraphase did not identify past, current, or future use of the shallow groundwater at the Site as drinking water. The closest use of deeper groundwater, likely hydrologically isolated from the shallow water at the Site, is more than 0.25 miles from the locality of the facility. The fine-grained nature of shallow surface soils and the hydrologic connection between shallow groundwater and the Nehalem River likely precludes first encountered groundwater from the possibility of being a reasonable drinking water supply alternative. Shallow groundwater likely discharges to the Nehalem River, and therefore has beneficial ecological use.

⁶ <https://www.ci.wheeler.or.us/water>

⁷ "Salinity Data and Maps," OAR 141-85-264, https://www.oregon.gov/dsl/wetlands-waters/Documents/salinity_maps.pdf.



5 Risk Screening Evaluation/Conceptual Site Model

This section discusses the nature and extent of contamination and presents an evaluation of potential contaminant exposure pathways and associated risks.

5.1 Nature and Extent of Contamination

Soil: TPH in the motor oil range is present in soil at the Site likely resulting from releases during operation of the saw/shingle mill between the 1920s and the 1960s. PAHs associated with hydrocarbons are also present in shallow soil at the Site. TPH data indicates significant degradation based on laboratory flags, which is consistent with the historical nature of the release. Figures 3 and 4 show boring locations where soil samples had detected concentrations of TPH and PAHs, respectively. Low levels (less than 1,000 mg/kg) of TPH, particularly TPH as motor oil/lube oil, are present in soil near the former machine shop and in a small area near the shingle mill building. The highest concentrations are in samples collected south of the former machine shop advanced in 2017. TPH as lube oil was detected in the duplicate sample at BM-B-11 and the sample at BM-B-12 at 1 foot bgs at concentrations of 783 and 501 mg/kg, respectively. The primary sample collected at BM-B-11 at 1 foot bgs detected TPH as lube oil at a concentration of 138 mg/kg, which indicates heterogeneity in sample-scale contaminant distribution at this location. Borings advanced by Terraphase around these relatively higher TPH concentrations were either non-detect for TPH (WS-SB-7, WS-SB-8) or had low concentrations (WS-SB-9 and WS-SB-10), therefore meeting the objective of delineating the extent of contamination in this area. TPH was also detected in a 2017 sample advanced between the former mill building and shingle mill (BM-B-1). Terraphase advanced borings north (WS-SB-10) and south (WS-SB-1) of this location, neither of which had detected TPH concentrations. Highest detections of PAHs concentrations in soil are also at borings BM-B-11 and BM-B-12. Borings advanced around these locations were either non-detect or had low concentrations of PAHs effectively delineating these detections. Other analytes were either non-detect (PCBs and VOCs) or below regional background concentrations (metals).

Dioxin and furan data has been collected in surface soil (0–0.5 foot bgs) at the former burn pit and in shallow soil (1 foot bgs) at the former lumber yard (boring BM-B-5), former burn pit (boring BM-B-7), and former mill (boring BM-B-20). Dioxins and furans could represent past industrial property use or reflect background processes, such as aerial deposition of wildfire soot. A comparison of calculated TEQs to background datasets is presented in Section 5.5.2.1.

Sediment: TPH and PAHs from past industrial operations are present in sediment at the shore adjacent to Nehalem River. These detections likely either derive from overland flow from the upland area, releases from past industrial activities that took place at or around the former piers, or from unknown upstream sources. They could also represent migration of contaminants from discharging groundwater, though the low solubility of PAHs and the lack of near-shore groundwater samples with detections of PAHs suggests this possibility is less likely. Another possibility is that the samples contained asphalt or treated wood fragments; however, the field notes do not report the presence of asphalt or wood in the



mud. Figure 5 shows sediment sample data. The only TPH detection was in sample WS-RS-2 collected south of the former sawmill. The highest PAH concentrations were in the duplicate sample from this location; concentrations in the primary sample were 10 times less than in the duplicate sample, indicating significant heterogeneity in the sample-scale contaminant distribution at this location. Other analytes were either not detected (PCBs) or below regional background concentrations (metals).

Groundwater: TPH and PAHs have migrated from shallow soil to shallow groundwater beneath the Site. Concentrations of TPH were detected in shallow groundwater near the former machine shop, with detections of TPH in the gasoline range at boring WS-WB-6, TPH in the diesel range at borings WS-WB-6 and BM-B-12, and TPH in the lube oil range at boring BM-B-12 (Figure 6). The 2017 samples showed TPH in the lube oil and diesel oil ranges at boring BM-B-5, and TPH in the hydraulic oil range at boring BM-B-1. However, 2024 boring samples at these locations were non-detect for TPH (WS-SB-4 and WS-SB-1). The screened intervals for the 2017 samples were 5–10 feet bgs. The screened intervals for the 2024 samples were 5–15 and 15–20 feet bgs for WS-SB-1 and WS-SB-4, respectively. The difference in TPH results may be due to the difference in screened intervals. If this is the case, it suggests very limited spatial and vertical extent of TPH contamination in this area. In general, the fine-grained nature of the subsurface soil, the proximity to a discharge point, and the fact that the area is tidally influenced suggest that downward vertical migration of contaminants at the Site is unlikely.

Low concentrations of PAHs (below drinking water standards) were detected in 2024 borings WS-SB-2 and WS-SB-5, advanced in the former lumber yard in the vicinity of BM-B-5 (Figure 7) where several PAHs were detected in 2017. No PAHs were detected in 2024 boring WS-SB-4, which was advanced at the location of BM-B-5.

Dissolved arsenic, barium, cadmium, chromium, lead, and selenium have been detected at one or more borings. Considering that concentrations of metals in soil are less than regional background, these detections may be due to naturally occurring dissolved metals concentrations. It is also possible that clay sized particles less than 0.45 micrometers are present, which could have bypassed the field filter, or these detections could be related to dissolution and transport of metals in shallow soil related to historical Site uses in unsampled areas.

5.2 Locality of the Facility

The locality of the facility is defined as any point where a human or ecological receptor contacts or is reasonably likely to contact hazardous substances related to the Site, including the potential for future contaminant migration. The locality of the facility includes:

- TPH and PAH impacted soil as indicated on Figure 3.
- TPH-impacted groundwater, as indicated on Figure 6, as well as groundwater in the upper 10 feet at borings BM-B-1 and BM-B-5.
- The shoreline of the Nehalem River adjacent to the Site, based on the presence of PAHs in the riverbank sediment and the possibility of groundwater discharge to this area.
- The former burn pit where dioxins and furans were detected in surface soil.



Potential human health and ecological risk pathways described in the following sections are based on exposure within the locality of the facility.

5.3 Exposure Pathway Assessment

Figure 8 presents a conceptual site model evaluating the potentially complete exposure pathways for contaminants at the Site to reach human and ecological receptors. Potentially contaminated media include surface and subsurface soil, sediment, and shallow groundwater. Current and/or reasonably likely future complete exposure pathways include:

- Direct contact of surface soil and sediment,
- Direct contact of subsurface soil during construction and excavation activities,
- Soil and subsurface soil leaching to groundwater and then discharging to surface water,
- Groundwater discharging to surface water; and,
- Direct contact with groundwater during excavation activities.

As discussed in Section 4, groundwater ingestion is an incomplete pathway for exposure to shallow groundwater at the Site. Based on the lack of VOC detections, and the low concentrations of semi-VOCs where detected, the vapor intrusion pathway is incomplete.

The Site is currently undeveloped; therefore, the only current receptors are trespassers and ecological receptors (birds, mammals, invertebrates, plants, and aquatic species). Future development at the Site may include lodging. Therefore, potential future receptors include residential (long-term guests), occupational (staff), and construction/excavation workers (during development and future maintenance activities).

5.4 Screening Level Selection

Based on the exposure pathway assessment, the following screening levels are appropriate for an initial assessment of risk to receptors from contamination at the Site. There is no generic screening level for the trespasser receptor. However, occupational and residential screening levels would be more conservative than those developed for trespassers; therefore, compliance with these screening levels can be considered protective of trespassers.

ODEQ Human Health RBCs (2023):

- Soil ingestion, dermal contact, and inhalation – residential, occupational, and construction/excavation worker scenarios. These RBCs are based on soil properties, though for simplicity, it will also be applied to sediment.
- Soil leaching to groundwater – residential and occupational scenarios. These RBCs are intended to evaluate drinking water risk from contaminants leaching from soil to groundwater; however, for simplicity, they will be used as an analogue for leaching to groundwater and then discharging to surface water as there is no generic ecological RBC to account for this transport mechanism.



- Groundwater in excavation – construction and excavation worker scenarios.

ODEQ Ecological RBCs (2020):

- Soil direct toxicity – plants, invertebrates.
- Soil ground feeding – threatened and endangered, and non-threatened and endangered birds and mammals.
- Soil top consumers – threatened and endangered, and non-threatened and endangered birds and mammals.
- Sediment – freshwater and marine aquatic life. Given the range of salinity at the Site, water is considered brackish. To be conservative, both freshwater and marine screening levels are considered.
- Water – freshwater and saltwater aquatic life. Given the range of salinity at the Site, water is considered brackish. To be conservative, both freshwater and marine screening levels are considered.
- Surface water – wildlife ingestion for surface water - threatened and endangered, and non-threatened and endangered birds and mammals.

In addition, soil concentrations were compared to ODEQ clean fill screening levels (2019), which inform the necessity for off-site soil disposal. Where metals were analyzed, results were compared to the Coast Range Province clean fill screen levels derived from regional background values. Concentrations below these values suggest contribution of metals from natural background.

Screening criteria, where established, are provided in Tables 1 through 4 for comparison purposes.

5.5 Risk Characterization

The following subsections discuss potential risk to human and ecological receptors based on the selected generic screening criteria.

5.5.1 Human Health

No detected concentrations exceed the RBCs for direct contact to soil for construction/excavation worker scenarios, soil leaching to groundwater for the residential or occupational receptor scenarios, or groundwater in an excavation for the construction/excavation worker receptor scenarios.

All arsenic concentrations in soil and sediment exceed the RBCs for direct contact of residential and occupational receptor scenarios of 0.43 and 1.9 mg/kg, respectively.⁸ However, all arsenic concentrations are below the ODEQ clean fill screening level for the Coast Range Province of 12 mg/kg, suggesting arsenic detections are due to naturally occurring background concentrations.

⁸ The 2017 soil sample collected from B-11 at 1 foot bgs had an arsenic concentration of 1.1 mg/kg, and therefore only exceeded the residential scenario direct contact to soil RBC.



The PAH benzo(a)pyrene was detected in the duplicate sample collected from BM-B-11 at one-foot bgs, and in the duplicate of sediment sample WS-RS-2-0-1, at concentrations of 0.533 and 0.405 mg/kg, respectively, which exceed the RBC for direct contact of residential receptor of 0.11 mg/kg. PAHs were not analyzed for the primary sample collected from BM-B-11 at one-foot bgs because the TPH concentration detected in this sample did not exceed 500 mg/kg, which was the threshold used by Parametrix to determine the necessity of PAHs analysis (Parametrix 2017). TPH as lube oil was detected at a concentration of 138 and 783 mg/kg in the primary and duplicate samples, respectively, collected from BM-B-11 at one-foot bgs, which is a relative percent difference of 140 percent. Similarly, benzo(a)pyrene was detected at concentrations of 0.0366 and 0.405 mg/kg in the primary and duplicate sediment samples WS-RS-2-0-1 for a relative percent difference of 167 percent. These results suggest a high level of sample-scale heterogeneity in contaminant distribution, and the area of sediment in which a residential receptor could be exposed is small and unlikely to result in unacceptable risk. Furthermore, development plans show the intention to build at BM-B-11, which would likely require soil removal and adding a foundation that would cap this material (Figure 2). No plans are in place for soil removal at sediment sample location WS-RS-2; however, this area is within mud at the base of a steep slope and is below the high tide water line, both of which would reduce the likelihood of direct exposure.

No other contaminant concentrations are above human health-based screening levels.

5.5.2 Ecological

This section provides a screening level evaluation of ecological risk at the Site by exposure media.

5.5.2.1 Soil

Concentrations of arsenic (one sample), barium (one sample), chromium (five samples), lead (one sample), and mercury (six samples) are above one or more ecological RBC in soils samples collected at the Site. However, all detected concentrations are less than clean fill screening levels; therefore, these metals are likely representative of regional background.

Concentrations of TPH (the sum of diesel and heavy oil range TPH) exceed the ecological RBC for direct toxicity to plants and invertebrates of 260 mg/kg in soil samples BM-B011-1.0-D, BM-B-12-1.0, BM-B-13-1.0, and BM-B-13-7.0 (Figure 3). Borings BM-B-11, BM-B-12, and BM-B-13 are within the planned development footprint, which will limit ecological exposure (Figure 2).

The sum of the detected concentrations of high molecular weight PAHs exceeds one or more ecological RBC in samples WS-SB-6-5.0-8.5, WS-SB-9-0.0-3.5, WS-SB-9-5.0-8.0, BM-B-11-1.0-D, and BM-B-12-1.0. Borings WS-SB-9, BM-B-11, and BM-B-12 are within the planned development footprint, which will limit ecological exposure (Figure 2). Boring WS-SB-6 is outside the development footprint; however, the sample from this boring with a sum of detected concentrations of high molecular weight PAHs above ecological RBCs was collected at five to 8.5 feet bgs. The ecological RBCs this sample exceeds are for threatened and endangered and non-threatened and endangered ground feeding birds and threatened and endangered ground feeding mammals, which would not be expected to be exposed to subsurface soil post development.



Calculated dioxin/furan TEQs for primary, duplicate, and triplicate incremental soil samples in the former burn pit area exceeded the threatened and endangered ground feeding birds; threatened and endangered and non-threatened and endangered ground feeding mammals; and threatened and endangered and non-threatened and endangered top consumer mammals ecological RBCs. The calculated TEQ for the sample collected in the burn pit area at one-foot bgs at sample location BM-B-7 was above the threatened and endangered ground feeding mammals ecological RBC. Dioxins and furans are common background contaminants that originate from both natural and anthropogenic sources. While ODEQ does not publish background TEQ concentrations, other state and federal agencies have conducted studies. Washington State Department of Ecology (2010), for example, provides a “natural background” TEQ concentration for upland soils of 5.2 pg/g. The Montana Department of Ecology conducted a background study (2011), finding TEQ concentrations ranging up to 12.7 pg/g for both urban and rural areas, with an overall upper tolerance limit of 3.7 pg/g. USEPA conducted a study (2007) of rural/remote soils of the United States and found TEQ concentrations up to 11.42 pg/g with an overall mean of 1.69 pg/g. Therefore, the calculated TEQs are possibly due to background concentrations. In addition, the area of the former burn pit is approximately 2,000 square feet (0.1 acres) and is unlikely to provide sufficient habitat to support the life cycle of individual species, much less population-level receptors.

5.5.2.2 Sediment

Five of seven and one of seven sediment samples have arsenic concentrations above the ecological RBCs for freshwater and marine ecosystems, respectively. One sediment sample has a barium concentration above the ecological RBC for marine ecosystems. However, all detected concentrations are less than clean fill screening levels. Therefore, the arsenic and barium concentrations are likely representative of naturally occurring background.

The benzo(a) pyrene concentrations in sediment samples WS-RS-1-0-1 (0.0426 mg/kg) and WS-RS-2-0-1 (0.0366 mg/kg) were slightly above the ecological RBC for freshwater ecosystems of 0.032 mg/kg. This screening level is very conservative, representing a level below which contaminants have a low probability of being toxic but where exceedances do not necessarily predict toxicity (Buchman 2008). Concentrations in these samples are much less than the probable effects level for benzo(a)pyrene of 0.782 mg/kg, at which compounds are more likely to be present at toxic levels (Buchman 2008). Various individual PAHs, and the sums of both low and high molecular weight PAHs, were above ecological RBCs in sediment sample WS-RS-2-0-1-DUP. Concentrations in this sample are much more likely to represent the presence of PAH compounds at toxic levels. However, as described in Section 5.5.1, the primary sample had concentrations an order of magnitude less than this duplicate sample, suggesting heterogeneity of contaminant distribution and that the area over which a receptor would be at risk is quite small. Therefore, it is unlikely that this sample represents contaminants that would pose a threat to ecological receptors.

No other compounds exceeded ecological RBCs for sediment.



5.5.2.3 Groundwater

Concentrations of dissolved barium (nine samples), dissolved cadmium (one sample), and dissolved lead (one sample) exceed the freshwater and/or saltwater ecological RBCs for aquatic species receptors. However, the lack of detected metals concentrations in soil above regional background levels suggests that these concentrations may be due to natural background or the inclusion of fine sediment in the samples.

Concentrations of TPH as hydraulic oil or motor oil (borings BM-B-1 and BM-B-5, respectively) exceeded the freshwater and saltwater ecological RBCs for aquatic species in one sample each. As discussed in Section 5.1, 2024 groundwater samples at these approximate locations were non-detect for TPH, suggesting a very small area of impact.

Concentrations of several PAHs were above ecological RBCs in the sample collected from 2017 in boring BM-B-5 in the former lumber yard; however, PAHs were not detected in a 2024 sample at this location, suggesting very limited scale of impacts.

Considering all groundwater impacts above ecological RBCs, the main ecological risk is to aquatic species. Groundwater concentrations were also compared to surface water ingestion for birds and mammals and there were no exceedances. Given the small size of the Site, and the likely low transmissivity of the fine-grained materials in which first groundwater was encountered, the relative contribution to Nehalem River flow from shallow groundwater compared to surface water flow is insignificant. Therefore, contaminant loading from groundwater discharge at the Site would not be discernable.

5.6 Clean Fill Screening Levels

Soil sample BM-B-11-1.0 detected benzo(a)pyrene at a concentration above the clean fill screening level. Incremental samples and boring sample BM-B7-1.0 collected at the former burn pit had calculated TEQs above clean fill screening levels. Sediment sample WS-RS-2-0-1-DUP had a benzo(a)pyrene concentration detected above the clean fill screening level. If soil in the area of these samples is disturbed during construction, it should be characterized and potentially removed from the Site and disposed appropriately. Current development plans show construction at the location of BM-B-11 only (Figure 2).

6 Conclusions

On May 21 and May 22, 2024, Terraphase conducted a Phase II ESA at the Site consisting of the collection of soil, sediment, and groundwater samples. The following conclusions are presented using the data obtained from this investigation and the site assessment conducted by Parametrix in 2017:

- **Geology:** The lithology encountered during soil sampling consisted of sand, silty sand, sandy silt, or silt with sand and gravel to depths ranging from three to 11.5 feet bgs underlain by elastic silt or fat



clay with abundant organics and variable amounts of sand to the maximum depth explored at 20 feet bgs.

- **Hydrogeology:** Groundwater was encountered between 5.66 and 16.5 feet bgs in all borings with post-drilling static water levels between 6.80 and 16.92 feet bgs.
- **Beneficial Use of Shallow Groundwater:** Shallow groundwater likely discharges to the Nehalem River and therefore has beneficial ecological use. No other beneficial use was determined. Drinking water within the vicinity of the Site is supplied by municipal water and irrigation water is provided by surface water diversion. Therefore, drinking water is not considered a complete exposure pathway.
- **Geophysical Survey:** No evidence of former HOTs, USTs, or anomalies suggestive of a former tank cavity were identified around the former building footprints surveyed.
- **Contaminants in Soil:**
 - TPH impacts are present in soil at the Site in the area of the former machine shop and burn pit, and in a small area near the former mill building, as shown on Figure 3.
 - PAHs were detected in soil in the general vicinity of TPH impacts, with the highest concentrations in the 2017 borings advanced near the former machine shop. Low levels of PAHs were also detected in the northern portion of the Site.
 - Metals were detected in soil samples at levels less than ODEQ clean fill screening criteria, suggesting they are representative of background concentrations.
 - Dioxins/furans were detected in incremental samples collected at the former burn pit.
 - PCBs were not detected in 2024 soil samples above laboratory reporting limits
 - VOCs were not detected in 2017 soil samples.
- **Contaminants in Sediment:**
 - PAHs were detected in sediment samples, with the highest concentrations in a duplicate sample at a concentration 10 times higher than in the primary sample.
 - Metals were detected in sediment at concentrations less than ODEQ clean fill screening criteria, suggesting they are representative of background concentrations.
 - PCBs were not detected in sediment samples above laboratory reporting limits
- **Contaminants in Groundwater:**
 - TPH impacts are present in soil at the Site in the area of the former machine shop and burn pit, as shown on Figure 5. TPH impacts were previously identified in the northern area of the Site; however, borings advanced in 2024 did not reproduce those findings.
 - PAH impacts in groundwater above ecological screening levels were detected in a boring advanced at the former lumber yard in 2017; however, PAHs were not detected in a groundwater sample collected from the same location in 2024. PAHs were detected at concentrations below screening levels in two 2024 borings advanced in the former lumber yard area.



- Dissolved metals concentrations are present in shallow groundwater, likely due to natural background.
- **Human Health Screening:** Based on an evaluation of potential complete exposure pathways and receptors and a comparison of generic RBCs to detected contaminant concentrations, there do not appear to be unacceptable risks to human health from Site-related contaminants. When accounting for background metals concentrations, only benzo(a)pyrene concentrations in two duplicate samples were above applicable human-health RBCs and concentrations in the associated primary samples were either much less or were likely much less based on a comparison of TPH concentrations.
- **Ecological Screening:** Contamination at the Site does not likely represent an unacceptable risk to ecological receptors based on a comparison of detected concentrations to ecological RBCs and background concentration data, the distribution of contaminants, the planned development footprint, and the insignificant volume of Site groundwater discharge compared to flow in the Nehalem River.
- **Soil Disposal Considerations:** Concentrations of benzo(a)pyrene in one soil sample and one sediment sample, and concentrations of dioxins/furans in incremental samples and one shallow soil sample were above ODEQ clean fill screening criteria. If disturbed, material in these areas of the Site exceeding these criteria should be appropriately characterized and disposed of as solid waste.

7 Recommendations

The following recommendations are provided based on the conclusions presented above:

- No further investigation of sediment, soil, and shallow groundwater conditions at the Site is warranted based on the apparent lack of environmental concerns to human health or the environment. If soil in the former burn pit and along the riverbank is disturbed during redevelopment, the excavated material should be properly characterized, containerized, labeled, and disposed appropriately off Site.
- Shallow groundwater is not suitable for water supply and should not be used as a drinking water source, as discussed in Section 4.
- A Contaminated Media Management Plan should be prepared to provide direction of the management and disposal of impacted soil disturbed during construction.

8 Limitations

This document was prepared for the sole use of Tillamook County and its successors and assignees for specific application to the Site. No other party should rely on the information contained herein without the prior written consent of Terraphase and Tillamook County.



Recommendations or conclusions made by Terraphase are based on our research, inspections, and field work. It is important to recognize that even the most comprehensive scope of services may fail to detect environmental liabilities on a particular site. Therefore, Terraphase cannot “certify” that a Site is free of environmental contamination. No expressed or implied representation or warranty is included or intended in our reports, except that our services were performed as described by our scope of services in accordance with the standard of care of our profession. Additionally, subsurface conditions will vary between exploration locations, perhaps significantly. The impacts of future events may require further investigation of the Site and subsequent data analysis along with revision of recommendations or conclusions.

9 References

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Tables

- 1 Soil Analytical Results
- 2 Riverbank Sediment Analytical Results
- 3 Dioxin/Furan Soil Sampling Analytical Results
- 4 Groundwater Analytical Results



Table 1
Soil Analytical Results
Phase II Environmental Assessment Report
Highway 101 Former Mill Site

					PAH and Pentachlorophenol									
Consultant	Location Code	Sample Depth (ft-bgs)	Field ID	Date	1-Methylnaphthalene mg/kg	2-Methylnaphthalene mg/kg	Acenaphthene mg/kg	Acenaphthylene mg/kg	Anthracene mg/kg	Benz(a)anthracene mg/kg	Benzo(a)pyrene mg/kg	Benzo(b)fluoranthene mg/kg	Benzo(g,h,i)perylene mg/kg	Benzo(k)fluoranthene mg/kg
ODEQ Clean Fill					0.36	11	0.25	120	6.8	0.73	0.11	1.1	25	11
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Construction Worker					-	-	21,000	-	110,000	170	17	170	-	1,700
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Residential					-	-	4,700	-	23,000	1.1	0.11	1.1	-	11
ODEQ RBC - 2023 - Soil - Leaching to GW - Residential					-	-	-	-	-	1.6	4.4	-	-	-
ODEQ ECORBCs - 2020 - Plants, Invertebrates, and Wildlife Exposed to Soil ¹					-	16	0.25	120	6.8	0.73	62	18	25	-
Terraphase	WS-SB-01	0 - 3	WS-SB-1-0.0-3.0	05/22/2024	<0.00645	<0.00645	<0.00323	<0.00323	<0.00323	<0.00323	<0.00484	<0.00484	<0.00323	<0.00484
		0 - 3	WS-SB-1-0.0-3.0-DUP	05/22/2024	<0.00583	<0.00583	<0.00292	<0.00292	<0.00292	<0.00292	<0.00438	<0.00438	<0.00292	<0.00438
		5 - 8	WS-SB-1-5.0-8.0	05/22/2024	<0.0260	<0.0260	<0.0130	<0.0130	<0.0130	<0.0130	<0.0195	<0.0195	<0.0130	<0.0195
	WS-SB-02	0 - 5	WS-SB-2-0.0-5.0	05/21/2024	<0.00738	<0.00738	<0.00370	<0.00370	<0.00370	<0.00370	<0.00554	<0.00554	<0.00370	<0.00554
		5 - 7	WS-SB-2-5.0-7.0	05/21/2024	<0.00731	<0.00731	<0.00366	<0.00366	<0.00366	<0.00366	<0.00548	<0.00548	<0.00366	<0.00548
	WS-SB-03	0 - 5	WS-SB-3-0.0-5.0	05/22/2024	<0.00743	<0.00743	<0.00372	<0.00372	<0.00372	<0.00372	<0.00558	<0.00558	<0.00372	<0.00558
		5 - 8	WS-SB-3-5.0-8.0	05/22/2024	<0.00855	<0.00855	<0.00428	<0.00428	<0.00428	<0.00428	<0.00642	<0.00642	<0.00428	<0.00642
	WS-SB-04	0 - 5	WS-SB-4-0.0-5.0	05/21/2024	<0.00763	<0.00763	<0.00382	<0.00382	<0.00382	<0.00382	<0.00572	<0.00572	<0.00382	<0.00572
		5 - 9	WS-SB-4-5.0-9.0	05/21/2024	<0.00820	<0.00820	<0.00411	<0.00411	<0.00411	<0.00411	<0.00615	<0.00615	<0.00411	<0.00615
	WS-SB-05	0 - 5	WS-SB-5-0.0-5.0	05/22/2024	<0.00715	<0.00715	<0.00358	<0.00358	<0.00358	<0.00358	<0.00536	<0.00536	<0.00358	<0.00536
		5 - 8.5	WS-SB-5-5.0-8.5	05/22/2024	<0.0747	<0.0747	<0.0374	<0.0374	<0.0374	<0.0374	<0.0560	<0.0560	<0.0374	<0.0560
	WS-SB-06	0 - 3	WS-SB-6-0.0-3.0	05/21/2024	<0.00689	<0.00689	<0.00345	<0.00345	<0.00345	0.00604	0.0144	0.0124	0.00872	0.00574 M-05
		5 - 8.5	WS-SB-6-5.0-8.5	05/21/2024	<0.0680	<0.0680	<0.0341	<0.0341	<0.0341	<0.0341	0.0706 D	0.0576 D	0.0449 D	<0.0510
	WS-SB-07	1 - 2.5	WS-SB-7-1.0-2.5	05/21/2024	<0.00590	<0.00590	<0.00295	<0.00295	<0.00295	<0.00295	<0.00443	<0.00443	<0.00295	<0.00443
		5 - 7.5	WS-SB-7-5.0-7.5	05/21/2024	<0.00785	<0.00785	<0.00393	<0.00393	<0.00393	<0.00393	<0.00589	<0.00589	<0.00393	<0.00589
	WS-SB-08	0 - 3.5	WS-SB-8-0.0-3.5	05/21/2024	<0.00622	<0.00622	<0.00311	<0.00311	<0.00311	<0.00311	<0.00467	<0.00467	<0.00311	<0.00467
		5 - 7.5	WS-SB-8-5.0-7.5	05/21/2024	<0.00655	<0.00655	<0.00328	<0.00328	<0.00328	<0.00328	<0.00492	<0.00492	<0.00328	<0.00492
	WS-SB-09	0 - 3.5	WS-SB-9-0.0-3.5	05/21/2024	<0.0288	<0.0288	<0.0144	<0.0144	<0.0144	0.0306 D	0.0831 D	0.0752 D	0.0546 D	0.0316 D M-05
		5 - 8	WS-SB-9-5.0-8.0	05/21/2024	<0.0235	<0.0235	<0.0118	<0.0118	<0.0118	0.0212 D	0.0603 D	0.0523 D	0.0463 D	0.0204 D M-05
	WS-SB-10	0 - 3	WS-SB-10-0.0-3.0	05/22/2024	<0.00949	<0.00949	<0.00475	<0.00475	<0.00475	0.00477 M-05	0.00858	0.0106	<0.00475	<0.00712
5 - 10		WS-SB-10-5.0-10.0	05/22/2024	<0.0107	<0.0107	<0.00535	<0.00535	<0.00535	<0.00535	0.00965	0.00868	<0.0535	<0.00802	
Parametrix	BM-B-1	1.0	BM-B-1-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-
		5.0	BM-B-1-5.0	01/18/17	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)
	BM-B-2	1.0	BM-B-2-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-
	BM-B-3	1.0	BM-B-3-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-
	BM-B-4	1.0	BM-B-4-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-
	BM-B-5	1.0	BM-B-5-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-
		1.0	BM-B-5-1.0-D	01/18/17	-	-	-	-	-	-	-	-	-	-
	BM-B-6	1.0	BM-B-6-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-
		1.0	BM-B-6-1.0-D	01/18/17	-	-	-	-	-	-	-	-	-	-
BM-B-7	1.0	BM-B-7-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-	
	5.5	BM-B-7-5.5	01/18/17	-	-	-	-	-	-	-	-	-	-	

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					PAH and Pentachlorophenol									
					1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene
Consultant	Location Code	Sample Depth (ft-bgs)	Field ID	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ODEQ Clean Fill					0.36	11	0.25	120	6.8	0.73	0.11	1.1	25	11
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Construction Worker					-	-	21,000	-	110,000	170	17	170	-	1,700
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Residential					-	-	4,700	-	23,000	1.1	0.11	1.1	-	11
ODEQ RBC - 2023 - Soil - Leaching to GW - Residential					-	-	-	-	-	1.6	4.4	-	-	-
ODEQ ECORBCs - 2020 - Plants, Invertebrates, and Wildlife Exposed to Soil ¹					-	16	0.25	120	6.8	0.73	62	18	25	-
Parametrix	BM-B-8	2.0	BM-B-8-2.0	01/17/17	-	-	-	-	-	-	-	-	-	-
	BM-B-9	0.5	BM-B-9-0.5	01/17/17	-	-	-	-	-	-	-	-	-	-
	BM-B-10	2.0	BM-B-10-2.0	01/17/17	-	-	-	-	-	-	-	-	-	-
		5.5	BM-B-10-5.5	01/17/17	-	-	-	-	-	-	-	-	-	-
	BM-B-11	1.0	BM-B-11-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-
		1.0	BM-B-11-1.0-D	01/17/17	ND (<0.167)	ND (<0.167)	ND (<0.167)	0.200	0.167	0.367	0.533	0.300	0.567	0.167
	BM-B-12	1.0	BM-B-12-1.0	01/17/17	ND (<0.033)	ND (<0.033)	ND (<0.033)	ND (<0.033)	ND (<0.033)	0.033	0.040	ND (<0.033)	0.047	ND (<0.033)
		5.0	BM-B-12-5.0	01/17/17	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	0.005	0.006	0.005	0.006	0.003
	BM-B-13	1.0	BM-B-13-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-
		7.0	BM-B-13-7.0	01/17/17	-	-	-	-	-	-	-	-	-	-
	BM-B-14	1.0	BM-B-14-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-
		5.5	BM-B-14-5.5	01/17/17	-	-	-	-	-	-	-	-	-	-
	BM-B-15	1.0	BM-B-15-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-
	BM-B-16	1.0	BM-B-16-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-
		6.0	BM-B-16-6.0	01/17/17	-	-	-	-	-	-	-	-	-	-
BM-B-17	1.0	BM-B-17-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-	
BM-B-18	1.0	BM-B-18-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-	
BM-B-19	1.0	BM-B-19-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-	
	7.0	BM-B-19-7.0	01/17/17	-	-	-	-	-	-	-	-	-	-	
BM-B-20	1.0	BM-B-20-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-	
	8.0	BM-B-20-8.0	01/17/17	-	-	-	-	-	-	-	-	-	-	

Table 1
Soil Analytical Results
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					PAH and Pentachlorophenol									
Consultant	Location Code	Sample Depth (ft-bgs)	Field ID	Date	Chrysene	Dibenzo(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Pentachlorophenol	Phenanthrene	Pyrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ODEQ Clean Fill					3.1	0.11	0.002	10	3.7	1.1	0.077	5.5	5.5	-
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Construction Worker					17,000	17	-	10,000	14,000	170	580	34	-	7,500
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Residential					110	0.11	-	2,400	3,100	1.1	5.3	1	-	1,800
ODEQ RBC - 2023 - Soil - Leaching to GW - Residential					-	-	-	-	-	-	0.077	0.066	-	-
ODEQ ECORBCs - 2020 - Plants, Invertebrates, and Wildlife Exposed to Soil ¹					3.1	14	-	10	3.7	71	1	0.81	5.5	10
Terraphase	WS-SB-01	0 - 3	WS-SB-1-0.0-3.0	05/22/2024	<0.00323	<0.00323	<0.00323	<0.00323	<0.00323	<0.00323	<0.00645	<0.0323	<0.00323	<0.00323
		0 - 3	WS-SB-1-0.0-3.0-DUP	05/22/2024	<0.00292	<0.00292	<0.00292	<0.00292	<0.00292	<0.00292	<0.00583	<0.0292	<0.00292	<0.00292
		5 - 8	WS-SB-1-5.0-8.0	05/22/2024	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0260	<0.13	<0.0130	<0.0130
	WS-SB-02	0 - 5	WS-SB-2-0.0-5.0	05/21/2024	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00370	<0.00738	<0.0370	<0.00370	<0.00370
		5 - 7	WS-SB-2-5.0-7.0	05/21/2024	<0.00366	<0.00366	<0.00366	<0.00366	<0.00366	<0.00366	<0.00731	<0.0366	<0.00366	0.00489
	WS-SB-03	0 - 5	WS-SB-3-0.0-5.0	05/22/2024	<0.00372	<0.00372	<0.00372	<0.00372	<0.00372	<0.00372	<0.00743	<0.0372	<0.00372	<0.00372
		5 - 8	WS-SB-3-5.0-8.0	05/22/2024	<0.00428	<0.00428	<0.00428	<0.00428	<0.00428	<0.00428	<0.00855	<0.0428	<0.00428	<0.00428
	WS-SB-04	0 - 5	WS-SB-4-0.0-5.0	05/21/2024	<0.00382	<0.00382	<0.00382	<0.00382	<0.00382	<0.00382	<0.00763	<0.0382	<0.00382	<0.00382
		5 - 9	WS-SB-4-5.0-9.0	05/21/2024	<0.00411	<0.00411	<0.00411	<0.00411	<0.00411	<0.00411	<0.00820	<0.0411	<0.00411	<0.00411
	WS-SB-05	0 - 5	WS-SB-5-0.0-5.0	05/22/2024	<0.00358	<0.00358	<0.00358	<0.00358	<0.00358	<0.00358	<0.00715	<0.0358	<0.00358	<0.00358
		5 - 8.5	WS-SB-5-5.0-8.5	05/22/2024	<0.0374	<0.0374	<0.0374	<0.0374	<0.0374	<0.0374	<0.0747	<0.374	<0.0374	<0.0374
	WS-SB-06	0 - 3	WS-SB-6-0.0-3.0	05/21/2024	0.00852	<0.00345	<0.00345	0.0150	<0.00345	0.00735	<0.00689	<0.0345	0.00920	0.0200
		5 - 8.5	WS-SB-6-5.0-8.5	05/21/2024	0.0519 D M-05	<0.0341	<0.0341	0.0442 D	<0.0341	0.0367 D	<0.0680	<0.341	0.0345 D	0.0527 D
	WS-SB-07	1 - 2.5	WS-SB-7-1.0-2.5	05/21/2024	<0.00295	<0.00295	<0.00295	<0.00295	<0.00295	<0.00295	<0.00590	<0.0295	<0.00295	<0.00295
		5 - 7.5	WS-SB-7-5.0-7.5	05/21/2024	<0.00393	<0.00393	<0.00393	<0.00393	<0.00393	<0.00393	<0.00785	<0.0393	<0.00393	<0.00393
	WS-SB-08	0 - 3.5	WS-SB-8-0.0-3.5	05/21/2024	<0.00311	<0.00311	<0.00311	<0.00311	<0.00311	<0.00311	<0.00622	<0.0311	<0.00311	<0.00311
		5 - 7.5	WS-SB-8-5.0-7.5	05/21/2024	<0.00328	<0.00328	<0.00328	<0.00328	<0.00328	<0.00328	<0.00655	<0.0328	<0.00328	<0.00328
	WS-SB-09	0 - 3.5	WS-SB-9-0.0-3.5	05/21/2024	0.0526 D	<0.0144	<0.0144	0.0987 D	<0.0144	0.0435 D	<0.0288	<0.144	0.0528 D	0.128 D
		5 - 8	WS-SB-9-5.0-8.0	05/21/2024	0.0318 D	<0.0118	<0.0118	0.0557 D	<0.0118	0.0352 D	0.0346 D	<0.118	0.0393 D	0.0739 D
	WS-SB-10	0 - 3	WS-SB-10-0.0-3.0	05/22/2024	0.00749	<0.00475	<0.00475	0.0151	<0.00475	<0.00475	<0.00949	<0.0475	0.00883	0.0144
5 - 10		WS-SB-10-5.0-10.0	05/22/2024	<0.00535	<0.0535	<0.00535	<0.00535	<0.00535	<0.0535	<0.0107	<0.0535	<0.00535	0.00616	
Parametrix	BM-B-1	1.0	BM-B-1-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-
		5.0	BM-B-1-5.0	01/18/17	ND (<0.003)	ND (<0.003)	-	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	-	ND (<0.003)	ND (<0.003)
	BM-B-2	1.0	BM-B-2-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-
	BM-B-3	1.0	BM-B-3-1.0	01/18/17	-	-	-	-	-	-	-	ND (<0.5)	-	-
	BM-B-4	1.0	BM-B-4-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-
	BM-B-5	1.0	BM-B-5-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-
		1.0	BM-B-5-1.0-D	01/18/17	-	-	-	-	-	-	-	-	-	-
	BM-B-6	1.0	BM-B-6-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-
1.0		BM-B-6-1.0-D	01/18/17	-	-	-	-	-	-	-	-	-	-	
BM-B-7	1.0	BM-B-7-1.0	01/18/17	-	-	-	-	-	-	-	-	ND (<0.5)	-	-
	5.5	BM-B-7-5.5	01/18/17	-	-	-	-	-	-	-	-	-	-	-

Table 1
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					PAH and Pentachlorophenol									
Consultant	Location Code	Sample Depth (ft-bgs)	Field ID	Date	Chrysene	Dibenzo(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Pentachlorophenol	Phenanthrene	Pyrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ODEQ Clean Fill					3.1	0.11	0.002	10	3.7	1.1	0.077	5.5	5.5	-
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Construction Worker					17,000	17	-	10,000	14,000	170	580	34	-	7,500
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Residential					110	0.11	-	2,400	3,100	1.1	5.3	1	-	1,800
ODEQ RBC - 2023 - Soil - Leaching to GW - Residential					-	-	-	-	-	-	0.077	0.066	-	-
ODEQ ECORBCs - 2020 - Plants, Invertebrates, and Wildlife Exposed to Soil ¹					3.1	14	-	10	3.7	71	1	0.81	5.5	10
Parametrix	BM-B-8	2.0	BM-B-8-2.0	01/17/17	-	-	-	-	-	-	-	-	-	-
	BM-B-9	0.5	BM-B-9-0.5	01/17/17	-	-	-	-	-	-	-	-	-	-
	BM-B-10	2.0	BM-B-10-2.0	01/17/17	-	-	-	-	-	-	-	-	-	-
		5.5	BM-B-10-5.5	01/17/17	-	-	-	-	-	-	-	-	-	-
	BM-B-11	1.0	BM-B-11-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-
		1.0	BM-B-11-1.0-D	01/17/17	0.300	ND (<0.167)	-	0.667	ND (<0.167)	0.433	ND (<0.167)	-	0.267	1.1
	BM-B-12	1.0	BM-B-12-1.0	01/17/17	0.033	ND (<0.033)	-	0.047	ND (<0.033)	0.033	ND (<0.033)	-	0.033	0.080
		5.0	BM-B-12-5.0	01/17/17	0.007	ND (<0.003)	-	0.008	ND (<0.003)	0.005	ND (<0.033)	-	0.005	0.013
	BM-B-13	1.0	BM-B-13-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-
		7.0	BM-B-13-7.0	01/17/17	-	-	-	-	-	-	-	-	-	-
	BM-B-14	1.0	BM-B-14-1.0	01/17/17	-	-	-	-	-	-	-	ND (<0.5)	-	-
		5.5	BM-B-14-5.5	01/17/17	-	-	-	-	-	-	-	-	-	-
	BM-B-15	1.0	BM-B-15-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-
	BM-B-16	1.0	BM-B-16-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-
		6.0	BM-B-16-6.0	01/17/17	-	-	-	-	-	-	-	-	-	-
BM-B-17	1.0	BM-B-17-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-	
BM-B-18	1.0	BM-B-18-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-	
BM-B-19	1.0	BM-B-19-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-	
	7.0	BM-B-19-7.0	01/17/17	-	-	-	-	-	-	-	-	-	-	
BM-B-20	1.0	BM-B-20-1.0	01/17/17	-	-	-	-	-	-	-	ND (<0.5)	-	-	
	8.0	BM-B-20-8.0	01/17/17	-	-	-	-	-	-	-	-	-	-	

Table 1
Soil Analytical Results
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					PAH and Pentachlorophenol		TPH			PCBs					
					Total LPAHs	Total HPAHs	TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254
Consultant	Location Code	Sample Depth (ft-bgs)	Field ID	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ODEQ Clean Fill					29	1.1	31	1,100	2,800	1.1	0.0048	0.0048	0.041	0.0073	0.041
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Construction Worker					-	-	9,700	4,600	11,000	-	-	-	-	-	-
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Residential					-	-	1,200	1,100	2,800	-	-	-	-	-	-
ODEQ RBC - 2023 - Soil - Leaching to GW - Residential					-	-	31	9,500	-	-	-	-	-	-	-
ODEQ ECORBCs - 2020 - Plants, Invertebrates, and Wildlife Exposed to Soil ¹					13	0.11	120	260 ²	260 ²	-	-	-	-	-	-
Terraphase	WS-SB-01	0 - 3	WS-SB-1-0.0-3.0	05/22/2024	ND	ND	<24.4	<61.1	<122	-	-	-	-	-	-
		0 - 3	WS-SB-1-0.0-3.0-DUP	05/22/2024	ND	ND	<22.1	<55.3	<111	-	-	-	-	-	-
		5 - 8	WS-SB-1-5.0-8.0	05/22/2024	ND	ND	<23.6	<59.1	<118	-	-	-	-	-	-
	WS-SB-02	0 - 5	WS-SB-2-0.0-5.0	05/21/2024	ND	ND	<26.5	<66.3	<133	-	-	-	-	-	-
		5 - 7	WS-SB-2-5.0-7.0	05/21/2024	ND	0.00489	<28.1	<70.4	<141	-	-	-	-	-	-
	WS-SB-03	0 - 5	WS-SB-3-0.0-5.0	05/22/2024	ND	ND	<25.9	<64.7	<129	-	-	-	-	-	-
		5 - 8	WS-SB-3-5.0-8.0	05/22/2024	ND	ND	<30.0	<75.0	<150	-	-	-	-	-	-
	WS-SB-04	0 - 5	WS-SB-4-0.0-5.0	05/21/2024	ND	ND	<28.3	<70.7	<141	-	-	-	-	-	-
		5 - 9	WS-SB-4-5.0-9.0	05/21/2024	ND	ND	<29.6	<74.0	<148	-	-	-	-	-	-
	WS-SB-05	0 - 5	WS-SB-5-0.0-5.0	05/22/2024	ND	ND	<27.0	<67.5	<135	-	-	-	-	-	-
		5 - 8.5	WS-SB-5-5.0-8.5	05/22/2024	ND	ND	<25.9	<64.6	<129	-	-	-	-	-	-
	WS-SB-06	0 - 3	WS-SB-6-0.0-3.0	05/21/2024	0.00920	0.098	<26.1	<65.3	<131	-	-	-	-	-	-
		5 - 8.5	WS-SB-6-5.0-8.5	05/21/2024	0.0345	0.359	<25.0	<23.6	90.4 F-03	-	-	-	-	-	-
	WS-SB-07	1 - 2.5	WS-SB-7-1.0-2.5	05/21/2024	ND	ND	<22.0	<55.0	<110	-	-	-	-	-	-
		5 - 7.5	WS-SB-7-5.0-7.5	05/21/2024	ND	ND	<30.3	<75.7	<151	-	-	-	-	-	-
	WS-SB-08	0 - 3.5	WS-SB-8-0.0-3.5	05/21/2024	ND	ND	<22.8	<57.0	<114	-	-	-	-	-	-
		5 - 7.5	WS-SB-8-5.0-7.5	05/21/2024	ND	ND	<23.1	<57.8	<116	-	-	-	-	-	-
	WS-SB-09	0 - 3.5	WS-SB-9-0.0-3.5	05/21/2024	0.0528	0.598	<25.4	<24.4	113 F-03	<0.0122	<0.0175	<0.0122	<0.0122	<0.0122	<0.0122
5 - 8		WS-SB-9-5.0-8.0	05/21/2024	0.0739	0.397	<21.1	<52.8	<106	-	-	-	-	-	-	
WS-SB-10	0 - 3	WS-SB-10-0.0-3.0	05/22/2024	0.00883	0.06	<35.4	<88.5	<177	-	-	-	-	-	-	
	5 - 10	WS-SB-10-5.0-10.0	05/22/2024	ND	0.02	<38.5	<96.4	<193	-	-	-	-	-	-	
Parametrix	BM-B-1	1.0	BM-B-1-1.0	01/18/17	-	-	-	ND (<22.3)	ND (<74.2)	-	-	-	-	-	-
		5.0	BM-B-1-5.0	01/18/17	ND	ND	-	ND (<22.2)	73.8	-	-	-	-	-	-
	BM-B-2	1.0	BM-B-2-1.0	01/18/17	-	-	-	ND (<20.6)	ND (<68.7)	-	-	-	-	-	-
	BM-B-3	1.0	BM-B-3-1.0	01/18/17	-	-	-	ND (<21.0)	ND (<70.0)	-	-	-	-	-	-
	BM-B-4	1.0	BM-B-4-1.0	01/18/17	-	-	-	ND (<20.9)	ND (<69.7)	-	-	-	-	-	-
	BM-B-5	1.0	BM-B-5-1.0	01/18/17	-	-	-	ND (<23.0)	ND (<76.6)	-	-	-	-	-	-
		1.0	BM-B-5-1.0-D	01/18/17	-	-	-	ND (<17.9)	ND (<59.7)	-	-	-	-	-	-
	BM-B-6	1.0	BM-B-6-1.0	01/18/17	-	-	-	ND (<18.5)	ND (<61.8)	-	-	-	-	-	-
		1.0	BM-B-6-1.0-D	01/18/17	-	-	-	ND (<19.2)	ND (<64.0)	-	-	-	-	-	-
	BM-B-7	1.0	BM-B-7-1.0	01/18/17	-	-	-	ND (<19.2)	ND (<64.0)	-	-	-	-	-	-
5.5		BM-B-7-5.5	01/18/17	-	-	-	ND (<19.2)	107	-	-	-	-	-	-	

Table 1
Soil Analytical Results
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					PAH and Pentachlorophenol		TPH			PCBs					
					Total LPAHs	Total HPAHs	TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254
Consultant	Location Code	Sample Depth (ft-bgs)	Field ID	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ODEQ Clean Fill					29	1.1	31	1,100	2,800	1.1	0.0048	0.0048	0.041	0.0073	0.041
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Construction Worker					-	-	9,700	4,600	11,000	-	-	-	-	-	-
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Residential					-	-	1,200	1,100	2,800	-	-	-	-	-	-
ODEQ RBC - 2023 - Soil - Leaching to GW - Residential					-	-	31	9,500	-	-	-	-	-	-	-
ODEQ ECORBCs - 2020 - Plants, Invertebrates, and Wildlife Exposed to Soil ¹					13	0.11	120	260 ²	260 ²	-	-	-	-	-	-
Parametrix	BM-B-8	2.0	BM-B-8-2.0	01/17/17	-	-	-	ND (<17.9)	ND (<59.8)	-	-	-	-	-	-
	BM-B-9	0.5	BM-B-9-0.5	01/17/17	-	-	-	ND (<18.7)	ND (<62.2)	-	-	-	-	-	-
	BM-B-10	2.0	BM-B-10-2.0	01/17/17	-	-	-	19.8	ND (<64.8)	-	-	-	-	-	-
		5.5	BM-B-10-5.5	01/17/17	-	-	-	25.8	85.9	-	-	-	-	-	-
	BM-B-11	1.0	BM-B-11-1.0	01/17/17	-	-	-	21.1	138	-	-	-	-	-	-
		1.0	BM-B-11-1.0-D	01/17/17	0.6	4.43	-	ND (<18.8)	783	-	-	-	-	-	-
	BM-B-12	1.0	BM-B-12-1.0	01/17/17	0.033	0.313	-	ND (<17.6)	501	-	-	-	-	-	-
		5.0	BM-B-12-5.0	01/17/17	0.005	0.058	-	23.5	ND (<69.0)	-	-	-	-	-	-
	BM-B-13	1.0	BM-B-13-1.0	01/17/17	-	-	-	ND (<17.8)	267	-	-	-	-	-	-
		7.0	BM-B-13-7.0	01/17/17	-	-	-	54.4	240	-	-	-	-	-	-
	BM-B-14	1.0	BM-B-14-1.0	01/17/17	-	-	-	ND (<16.7)	ND (<55.7)	-	-	-	-	-	-
		5.5	BM-B-14-5.5	01/17/17	-	-	-	ND (<20.4)	ND (<67.9)	-	-	-	-	-	-
	BM-B-15	1.0	BM-B-15-1.0	01/17/17	-	-	-	ND (<17.8)	ND (<59.5)	-	-	-	-	-	-
	BM-B-16	1.0	BM-B-16-1.0	01/17/17	-	-	-	ND (<20.0)	ND (<66.5)	-	-	-	-	-	-
		6.0	BM-B-16-6.0	01/17/17	-	-	-	ND (<22.2)	ND (<73.9)	-	-	-	-	-	-
	BM-B-17	1.0	BM-B-17-1.0	01/17/17	-	-	-	ND (<18.4)	ND (<61.2)	-	-	-	-	-	-
BM-B-18	1.0	BM-B-18-1.0	01/17/17	-	-	-	ND (<17.3)	ND (<57.3)	-	-	-	-	-	-	
BM-B-19	1.0	BM-B-19-1.0	01/17/17	-	-	-	ND (<19.7)	ND (<65.8)	-	-	-	-	-	-	
	7.0	BM-B-19-7.0	01/17/17	-	-	-	ND (<18.9)	ND (<63.0)	-	-	-	-	-	-	
BM-B-20	1.0	BM-B-20-1.0	01/17/17	-	-	-	ND (<19.1)	ND (<63.6)	-	-	-	-	-	-	
	8.0	BM-B-20-8.0	01/17/17	-	-	-	ND (<22.4)	ND (<74.6)	-	-	-	-	-	-	

Table 1
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Consultant	Location Code	Sample Depth (ft-bgs)	Field ID	Date	PCBs		Metals							Volatile Organic Compounds		
					Aroclor 1260 mg/kg	Total PCBs mg/kg	Total Arsenic mg/kg	Total Barium mg/kg	Total Cadmium mg/kg	Total Chromium mg/kg	Total Lead mg/kg	Total Selenium mg/kg	Total Silver mg/kg		Total Mercury mg/kg	
ODEQ Clean Fill					0.24	-	12	840	0.54	240	34	1.5	0.41	0.11	-	
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Construction Worker					-	4.9	15	69,000	350	49	250	-	1,800	110	-	
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Residential					-	0.23	0.43	15,000	78	-	200	-	390	23	-	
ODEQ RBC - 2023 - Soil - Leaching to GW - Residential					-	0.24	-	-	-	-	-	-	-	-	-	
ODEQ ECORBCs - 2020 - Plants, Invertebrates, and Wildlife Exposed to Soil ¹					-	0.0073	6.8	110	0.27	23	11	0.52	2.6	0.013	-	
Terraphase	WS-SB-01	0 - 3	WS-SB-1-0.0-3.0	05/22/2024	-	-	-	-	-	-	-	-	-	-	-	
		0 - 3	WS-SB-1-0.0-3.0-DUP	05/22/2024	-	-	-	-	-	-	-	-	-	-	-	-
		5 - 8	WS-SB-1-5.0-8.0	05/22/2024	-	-	-	-	-	-	-	-	-	-	-	-
	WS-SB-02	0 - 5	WS-SB-2-0.0-5.0	05/21/2024	-	-	-	-	-	-	-	-	-	-	-	-
		5 - 7	WS-SB-2-5.0-7.0	05/21/2024	-	-	-	-	-	-	-	-	-	-	-	-
	WS-SB-03	0 - 5	WS-SB-3-0.0-5.0	05/22/2024	-	-	-	-	-	-	-	-	-	-	-	-
		5 - 8	WS-SB-3-5.0-8.0	05/22/2024	-	-	-	-	-	-	-	-	-	-	-	-
	WS-SB-04	0 - 5	WS-SB-4-0.0-5.0	05/21/2024	-	-	-	-	-	-	-	-	-	-	-	-
		5 - 9	WS-SB-4-5.0-9.0	05/21/2024	-	-	-	-	-	-	-	-	-	-	-	-
	WS-SB-05	0 - 5	WS-SB-5-0.0-5.0	05/22/2024	-	-	-	-	-	-	-	-	-	-	-	-
		5 - 8.5	WS-SB-5-5.0-8.5	05/22/2024	-	-	-	-	-	-	-	-	-	-	-	-
	WS-SB-06	0 - 3	WS-SB-6-0.0-3.0	05/21/2024	-	-	-	-	-	-	-	-	-	-	-	-
		5 - 8.5	WS-SB-6-5.0-8.5	05/21/2024	-	-	-	-	-	-	-	-	-	-	-	-
	WS-SB-07	1 - 2.5	WS-SB-7-1.0-2.5	05/21/2024	-	-	-	-	-	-	-	-	-	-	-	-
5 - 7.5		WS-SB-7-5.0-7.5	05/21/2024	-	-	-	-	-	-	-	-	-	-	-	-	
WS-SB-08	0 - 3.5	WS-SB-8-0.0-3.5	05/21/2024	-	-	-	-	-	-	-	-	-	-	-	-	
	5 - 7.5	WS-SB-8-5.0-7.5	05/21/2024	-	-	-	-	-	-	-	-	-	-	-	-	
WS-SB-09	0 - 3.5	WS-SB-9-0.0-3.5	05/21/2024	<0.0122	<0.0175	-	-	-	-	-	-	-	-	-	-	
	5 - 8	WS-SB-9-5.0-8.0	05/21/2024	-	-	-	-	-	-	-	-	-	-	-	-	
WS-SB-10	0 - 3	WS-SB-10-0.0-3.0	05/22/2024	-	-	-	-	-	-	-	-	-	-	-	-	
	5 - 10	WS-SB-10-5.0-10.0	05/22/2024	-	-	-	-	-	-	-	-	-	-	-	-	
Parametrix	BM-B-1	1.0	BM-B-1-1.0	01/18/17	-	-	7.34	65.7	0.122	23.5	28.8	ND (<1.04)	0.144	0.0506	-	
		5.0	BM-B-1-5.0	01/18/17	-	-	-	-	-	-	-	-	-	-	-	
	BM-B-2	1.0	BM-B-2-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-	-	
	BM-B-3	1.0	BM-B-3-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-	-	
	BM-B-4	1.0	BM-B-4-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-	-	
	BM-B-5	1.0	BM-B-5-1.0	01/18/17	-	-	3.46	96.5	0.102	13.8	6.83	ND (<0.972)	0.101	0.0289	ND	
		1.0	BM-B-6-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-	-	
	BM-B-6	1.0	BM-B-6-1.0-D	01/18/17	-	-	-	-	-	-	-	-	-	-	-	-
1.0		BM-B-7-1.0	01/18/17	-	-	-	-	-	-	-	-	-	-	-	ND	
BM-B-7	5.5	BM-B-7-5.5	01/18/17	-	-	3.46	50.9	ND (<0.116)	23.0	7.4	ND (<0.116)	0.14	0.0226	-		

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Highway 101 Former Mill Site

					PCBs		Metals								Volatile Organic Compounds
Consultant	Location Code	Sample Depth (ft-bgs)	Field ID	Date	Aroclor 1260 mg/kg	Total PCBs mg/kg	Total Arsenic mg/kg	Total Barium mg/kg	Total Cadmium mg/kg	Total Chromium mg/kg	Total Lead mg/kg	Total Selenium mg/kg	Total Silver mg/kg	Total Mercury mg/kg	
ODEQ Clean Fill					0.24	-	12	840	0.54	240	34	1.5	0.41	0.11	-
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Construction Worker					-	4.9	15	69,000	350	49	250	-	1,800	110	-
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Residential					-	0.23	0.43	15,000	78	-	200	-	390	23	-
ODEQ RBC - 2023 - Soil - Leaching to GW - Residential					-	0.24	-	-	-	-	-	-	-	-	-
ODEQ ECORBCs - 2020 - Plants, Invertebrates, and Wildlife Exposed to Soil ¹					-	0.0073	6.8	110	0.27	23	11	0.52	2.6	0.013	-
Parametrix	BM-B-8	2.0	BM-B-8-2.0	01/17/17	-	-	-	-	-	-	-	-	-	-	-
	BM-B-9	0.5	BM-B-9-0.5	01/17/17	-	-	-	-	-	-	-	-	-	-	-
	BM-B-10	2.0	BM-B-10-2.0	01/17/17	-	-	3.37	174	ND (<0.0998)	11.1	6.95	ND (<0.998)	0.127	0.0204	-
		5.5	BM-B-10-5.5	01/17/17	-	-	-	-	-	-	-	-	-	-	-
	BM-B-11	1.0	BM-B-11-1.0	01/17/17	-	-	1.13	55.1	0.0996	17.1	4.39	ND (<0.975)	0.192	ND (<0.0165)	-
		1.0	BM-B-11-1.0-D	01/17/17	-	-	3.28	57.5	ND (<0.101)	13.8	7.58	ND (<1.01)	ND (<0.101)	0.0184	-
	BM-B-12	1.0	BM-B-12-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-	-
		5.0	BM-B-12-5.0	01/17/17	-	-	4.57	90.3	ND (<0.141)	35.3	7.44	ND (<1.41)	ND (<0.141)	ND (<0.0226)	-
	BM-B-13	1.0	BM-B-13-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-	-
		7.0	BM-B-13-7.0	01/17/17	-	-	-	-	-	-	-	-	-	-	-
	BM-B-14	1.0	BM-B-14-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-	-
		5.5	BM-B-14-5.5	01/17/17	-	-	-	-	-	-	-	-	-	-	-
	BM-B-15	1.0	BM-B-15-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-	-
	BM-B-16	1.0	BM-B-16-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-	ND
		6.0	BM-B-16-6.0	01/17/17	-	-	3.40	32.4	ND (<0.142)	24.7	4.23	ND (<1.42)	0.146	ND (<0.0247)	-
BM-B-17	1.0	BM-B-17-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-	-	
BM-B-18	1.0	BM-B-18-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-	-	
BM-B-19	1.0	BM-B-19-1.0	01/17/17	-	-	2.81	88.4	0.123	28.0	2.82	ND (<1.08)	0.18	0.0258	-	
	7.0	BM-B-19-7.0	01/17/17	-	-	-	-	-	-	-	-	-	-	-	
BM-B-20	1.0	BM-B-20-1.0	01/17/17	-	-	-	-	-	-	-	-	-	-	ND	
	8.0	BM-B-20-8.0	01/17/17	-	-	-	-	-	-	-	-	-	-	-	

Table 1

Soil Analytical Results

Phase II Environmental Assessment Report

Highway 101 Former Mill Site

Notes:

Detected concentrations are **bold-faced**

mg/kg= milligrams per kilogram

- = Not available/Not analyzed

< or ND = analyte not detected at or above laboratory reporting limit

D = Reported result is from a dilution

F-03 = The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.

M-05 = Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.

ft-bgs = feet below ground surface

ODEQ = Oregon Department of Environmental Quality

RBC = Risk-Based Concentration

Total LPAHs = sum of naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, and anthracene

Total HPAHs = sum of fluoranthene, pyrene, benz(a)anthracene, chrysene, total benzofluoranthenes, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene

¹ Listed values are the most conservative of those listed in Table 1a of ODEQ's *Conducting Ecological Risk Assessments* (2020).

² Table 1a indicates comparing the sum of diesel and heavy oil range hydrocarbons. Exceedances are indicated by shading the higher of the two individual contributors.

Table 2
Riverbank Sediment Analytical Results
Phase II Environmental Assessment Report
Highway 101 Former Mill Site

Location Code	Sample Depth (ft-bgs)	Field ID	Date	Metal								PAHs and Pentachlorophenol			
				Arsenic mg/kg	Barium mg/kg	Cadmium mg/kg	Total Chromium mg/kg	Lead mg/kg	Mercury mg/kg	Selenium mg/kg	Silver mg/kg	1-Methylnaphthalene mg/kg	2-Methylnaphthalene mg/kg	Acenaphthene mg/kg	Acenaphthylene mg/kg
ODEQ Clean Fill (Coast Range Province)				12	840	0.54	240	34	0.11	1.5	0.41	0.36	11	0.25	120
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Construction Worker				15	69,000	350	-	250	110	-	1,800	-	-	21,000	-
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Residential				0.43	15,000	78	-	200	23	-	390	-	-	4,700	-
ODEQ RBC - 2023 - Soil - Leaching to GW - Residential				-	-	-	-	30	-	-	-	-	-	-	
ODEQ RBC Sediment - Freshwater				6	-	0.6	37	35	0.2	-	4.5	-	-	0.290	0.160
ODEQ RBC Sediment - Marine				7	48	0.7	52	30	0.1	1	0.7	-	20	0.007	0.006
WS-RS-01	0 - 1	WS-RS-1-0-1	05/22/2024	6.19	50.9	<0.409	21.5	19.7	<0.163	<2.04	<0.409	<0.0438	<0.0438	<0.0219	<0.0219
	2 - 3	WS-RS-1-2-3	05/22/2024	6.50	31.7	<0.491	16.3	6.79	<0.196	<2.46	<0.491	<0.0458	<0.0458	<0.0229	<0.0229
WS-RS-02	0 - 1	WS-RS-2-0-1	05/22/2024	5.37	21.3	<0.336	21.2	15.2	<0.134	<1.68	<0.336	<0.0321	<0.0321	<0.0161	<0.0161
		WS-RS-2-0-1-DUP	05/22/2024	6.09	17.5	<0.285	29.4	21.9	<0.114	<1.42	<0.285	<0.295	<0.295	<0.148	<0.148
WS-RS-03	2 - 3	WS-RS-2-2-3	05/22/2024	9.42	40.3	<0.318	16.4	29.3	<0.127	<1.59	<0.318	<0.0753	<0.0753	<0.0377	<0.0377
	0 - 1	WS-RS-3-0-1	05/22/2024	4.23	25.3	<0.317	18.2	9.66	<0.127	<1.58	<0.317	<0.0327	<0.0327	<0.0164	<0.0164
	2 - 3	WS-RS-3-2-3	05/22/2024	6.22	47.4	<0.356	18.1	7.88	<0.142	<1.78	<0.356	<0.00835	<0.00835	<0.00418	<0.00418

Notes:

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Table 2
Riverbank Sediment Analytical Results
Phase II Environmental Assessment Report
Highway 101 Former Mill Site

				PAHs and Pentachlorophenol											
				Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene
Location Code	Sample Depth (ft-bgs)	Field ID	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ODEQ Clean Fill (Coast Range Province)				6.8	0.73	0.11	1.1	25	11	3.1	0.11	0.002	10	3.7	1.1
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Construction Worker				110,000	170	17	170	-	1,700	17,000	17	-	10,000	14,000	170
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Residential				23,000	1.1	0.11	1.1	-	11	110	0.11	-	2,400	3,100	1.1
ODEQ RBC - 2023 - Soil - Leaching to GW - Residential				-	1.6	4.4	-	-	-	-	-	-	-	-	-
ODEQ RBC Sediment - Freshwater				0.057	0.032	0.032	-	0.300	0.027	0.057	0.033	5.1	0.111	0.077	0.017
ODEQ RBC Sediment - Marine				0.047	0.075	0.089	1,800	0.670	1.8	0.107	0.006	0.110	0.113	0.021	0.600
WS-RS-01	0 - 1	WS-RS-1-0-1	05/22/2024	<0.0219	0.0221 D	0.0426 D	0.0402 D	<0.0219	<0.0328	<0.0219	<0.0219	<0.0219	0.0359 D	<0.0219	<0.0219
	2 - 3	WS-RS-1-2-3	05/22/2024	<0.0229	<0.0229	<0.0344	<0.0344	<0.0229	<0.0344	<0.0229	<0.0229	<0.0229	<0.0229	<0.0229	<0.0229
WS-RS-02	0 - 1	WS-RS-2-0-1	05/22/2024	<0.0161	0.0194 D	0.0366 D	0.0304 D	0.0196 D	<0.0241	0.0236 D	<0.0161	<0.0161	0.0288 D	<0.0161	<0.0161
		WS-RS-2-0-1-DUP	05/22/2024	<0.148	0.187 D	0.405 D	0.337 D	0.235 D	<0.221	0.227 D	<0.148	<0.148	0.375 D	<0.148	0.192 D
WS-RS-03	2 - 3	WS-RS-2-2-3	05/22/2024	<0.0377	<0.0377	<0.0565	<0.0565	<0.0377	<0.0565	<0.0377	<0.0377	<0.0377	<0.0377	<0.0377	<0.0377
	0 - 1	WS-RS-3-0-1	05/22/2024	<0.0164	<0.0164	<0.0245	<0.0245	<0.0164	<0.0245	<0.0164	<0.0164	<0.0164	<0.0164	<0.0164	<0.0164
	2 - 3	WS-RS-3-2-3	05/22/2024	<0.00418	0.00647	0.0107	0.0109	0.0117	<0.00626	0.00735	<0.00418	<0.00418	0.0120	<0.00418	0.00876

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Table 2
Riverbank Sediment Analytical Results
Phase II Environmental Assessment Report
Highway 101 Former Mill Site

Location Code	Sample Depth (ft-bgs)	Field ID	Date	PAHs and Pentachlorophenol						TPH		
				Naphthalene mg/kg	Pentachlorophenol mg/kg	Phenanthrene mg/kg	Pyrene mg/kg	Total LPAHs mg/kg	Total HPAHs mg/kg	TPH as Gasoline mg/kg	TPH as Diesel mg/kg	TPH as Motor Oil mg/kg
ODEQ Clean Fill (Coast Range Province)				0.077	0.066	5.5	10	29	1.1	31	1,100	2,800
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Construction Worker				580	34	-	7,500	-	-	9,700	4,600	11,000
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Residential				5.3	1	-	1,800	-	-	1,200	1,100	2,800
ODEQ RBC - 2023 - Soil - Leaching to GW - Residential				0.077	0.066	-	-	-	-	31	9,500	-
ODEQ RBC Sediment - Freshwater				0.176	-	0.042	0.053	0.076	0.193	-	-	-
ODEQ RBC Sediment - Marine				0.035	0.017	0.086	0.152	0.312	0.655	-	-	-
WS-RS-01	0 - 1	WS-RS-1-0-1	05/22/2024	<0.0438	<0.219	<0.0219	0.0395 D	ND	0.179	<40.1	<37.4	<74.8
	2 - 3	WS-RS-1-2-3	05/22/2024	<0.0458	<0.229	<0.0229	<0.0229	ND	ND	<44.4	<111	<222
WS-RS-02	0 - 1	WS-RS-2-0-1	05/22/2024	<0.0321	<0.161	0.0178 D	0.0425 D	0.0178	0.176	<30.6	<76.4	<153
		WS-RS-2-0-1-DUP	05/22/2024	<0.295	<1.48	0.155 D	0.476 D	0.155	2.43	<25.9	<64.9	<130
WS-RS-03	2 - 3	WS-RS-2-2-3	05/22/2024	<0.0753	<0.377	<0.0377	<0.0377	ND	ND	<27.0	<26.3	145
	0 - 1	WS-RS-3-0-1	05/22/2024	<0.0327	<0.164	<0.0164	<0.0164	ND	ND	<29.6	<28.1	<56.1
	2 - 3	WS-RS-3-2-3	05/22/2024	<0.00835	<0.0418	0.00850	0.0132	0.00850	0.08	<30.5	<76.3	<153

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Table 2
Riverbank Sediment Analytical Results
Phase II Environmental Assessment Report
Highway 101 Former Mill Site

Location Code	Sample Depth (ft-bgs)	Field ID	Date	PCBs							
				Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs
				mg/kg	mg/kg						
ODEQ Clean Fill (Coast Range Province)				1.1	0.0048	0.0048	0.041	0.0073	0.041	0.24	-
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Construction Worker				-	-	-	-	-	-	-	4.9
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Residential				-	-	-	-	-	-	-	0.23
ODEQ RBC - 2023 - Soil - Leaching to GW - Residential				-	-	-	-	-	-	-	0.24
ODEQ RBC Sediment - Freshwater				-	-	-	-	21	7	-	34
ODEQ RBC Sediment - Marine				-	-	-	-	-	-	-	22
WS-RS-01	0 - 1	WS-RS-1-0-1	05/22/2024	-	-	-	-	-	-	-	-
	2 - 3	WS-RS-1-2-3	05/22/2024	-	-	-	-	-	-	-	-
WS-RS-02	0 - 1	WS-RS-2-0-1	05/22/2024	-	-	-	-	-	-	-	-
		WS-RS-2-0-1-DUP	05/22/2024	-	-	-	-	-	-	-	-
	2 - 3	WS-RS-2-2-3	05/22/2024	<0.0133	<0.0133	<0.0133	<0.0133	<0.0133	<0.0133	<0.0133	<0.0133
WS-RS-03	0 - 1	WS-RS-3-0-1	05/22/2024	-	-	-	-	-	-	-	-
	2 - 3	WS-RS-3-2-3	05/22/2024	-	-	-	-	-	-	-	-

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Table 3
Soil Dioxans and Furans Analytical Results
Phase II Environmental Assessment Report
Highway 101 Former Mill Site

					Dioxin and Furan													
					1,2,3,4,6,7,8,9-OCDD	1,2,3,4,6,7,8,9-OCDF	1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	1,2,3,4,7,8-HxCDD	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDD	1,2,3,7,8,9-HxCDF	1,2,3,7,8-PeCDD	1,2,3,7,8-PeCDF	
Consultant	Location Code	Sample Depth (ft-bgs)	Field ID	Date	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	
ODEQ Clean Fill					-	-	-	-	-	-	-	-	-	-	-	-	-	-
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Construction Worker					-	-	-	-	-	-	-	-	-	-	-	-	-	-
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Residential					-	-	-	-	-	-	-	-	-	-	-	-	-	-
ODEQ RBC - 2023 - Soil - Leaching to GW - Residential					-	-	-	-	-	-	-	-	-	-	-	-	-	-
ODEQ ECORBC - 2020 - Soil - Ground Feeding - T&E Birds					-	-	-	-	-	-	-	-	-	-	-	-	-	-
ODEQ ECORBC - 2020 - Soil - Ground Feeding - Non-T&E Birds					-	-	-	-	-	-	-	-	-	-	-	-	-	-
ODEQ ECORBC - 2020 - Soil - Ground Feeding - T&E Mammals					-	-	-	-	-	-	-	-	-	-	-	-	-	-
ODEQ ECORBC - 2020 - Soil - Ground Feeding - Non-T&E Mammals					-	-	-	-	-	-	-	-	-	-	-	-	-	-
ODEQ ECORBC - 2020 - Soil - Top Consumers - T&E - Birds					-	-	-	-	-	-	-	-	-	-	-	-	-	-
ODEQ ECORBC - 2020 - Soil - Top Consumers - Non-T&E - Birds					-	-	-	-	-	-	-	-	-	-	-	-	-	-
ODEQ ECORBC - 2020 - Soil - Top Consumers - T&E - Mammals					-	-	-	-	-	-	-	-	-	-	-	-	-	-
ODEQ ECORBC - 2020 - Soil - Top Consumers - Non-T&E - Mammals					-	-	-	-	-	-	-	-	-	-	-	-	-	-
ODEQ ECORBC - 2020 - Soil - Invertebrates					-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terraphase	WS-IMS	0 - 0.5	WS-IMS-0-0.5	05/22/2024	145	5.19	17.4	1.83 J	<2.49	<2.49	<2.49	<2.49	<2.49	<2.49	<2.49	<2.49	<2.49	
		0 - 0.5	WS-IMS-0-0.5-DUP	05/23/2024	963	24.2	77.3	4.05	<2.51	<2.51	<2.51	1.81 J	<2.51	<2.51	<2.51	<2.51	<2.51	<2.51
			WS-IMS-0-0.5-TRP		289	5.92	34.8	3.01	<2.55	<2.55	<2.55	2.15 J	<2.55	<2.55	<2.55	<2.55	<2.55	<2.55
Parametrix	BM-B-5	1.0	BM-B-5-1.0	01/18/17	8.47	ND (1.97)	ND (1.10)	ND (0.506)	ND (0.609)	ND (1.25)	ND (0.698)	ND (1.43)	ND (0.685)	ND (1.28)	ND (0.769)	ND (0.731)	ND (0.438)	
	BM-B-7	1.0	BM-B-7-1.0	01/18/17	38.0	1.82	3.39	ND (0.506)	ND (0.609)	ND (0.898)	ND (0.698)	ND (1.07)	ND (0.685)	ND (0.946)	ND (0.769)	ND (0.565)	ND (0.586)	
	BM-B-20	1.0	BM-B-20-1.0	01/17/17	5.72	ND (1.18)	ND (0.525)	ND (0.295)	ND (0.357)	ND (0.793)	ND (0.576)	ND (0.866)	ND (0.605)	ND (0.797)	ND (0.658)	ND (0.628)	ND (0.538)	

Notes:

Detected concentrations are **bold-faced**

mg/kg= milligrams per kilogram

- = Not available

< = analyte not detected at or above laboratory reporting limit

J = concentration found below the lower quantitation limit but greater than zero

ft-bgs = feet below ground surface

ODEQ = Oregon Department of Environmental Quality

RBC = Risk-Based Concentration

¹ Total Toxic Equivalency based on 2005 World Health Organization Toxic Equivalent Factors

ODEQ ECORBC Total Toxic Equivalency screening levels are shaded when one or more sample result exceeds it.

IMS = Incremental Sampling Method (USEPA 2019)

Table 3
Soil Dioxans and Furans Analytical Results
Phase II Environmental Assessment Report
Highway 101 Former Mill Site

					Dioxin and Furan				
Consultant	Location Code	Sample Depth (ft-bgs)	Field ID	Date	2,3,4,6,7,8-HxCDF pg/g	2,3,4,7,8-PeCDF pg/g	2,3,7,8-TCDD pg/g	2,3,7,8-TCDF pg/g	Total Toxic Equivalency ¹ pg/g
ODEQ Clean Fill					-	-	-	-	0.29
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Construction Worker					-	-	-	-	170
ODEQ RBC - 2023 - Soil - Ingestion, Dermal Contact, and Inhalation - Residential					-	-	-	-	4.7
ODEQ RBC - 2023 - Soil - Leaching to GW - Residential					-	-	-	-	6.8
ODEQ ECORBC - 2020 - Soil - Ground Feeding - T&E Birds					-	-	-	-	0.52
ODEQ ECORBC - 2020 - Soil - Ground Feeding - Non-T&E Birds					-	-	-	-	5.2
ODEQ ECORBC - 2020 - Soil - Ground Feeding - T&E Mammals					-	-	-	-	0.037
ODEQ ECORBC - 2020 - Soil - Ground Feeding - Non-T&E Mammals					-	-	-	-	0.25
ODEQ ECORBC - 2020 - Soil - Top Consumers - T&E - Birds					-	-	-	-	5.2
ODEQ ECORBC - 2020 - Soil - Top Consumers - Non-T&E - Birds					-	-	-	-	52
ODEQ ECORBC - 2020 - Soil - Top Consumers - T&E - Mammals					-	-	-	-	0.057
ODEQ ECORBC - 2020 - Soil - Top Consumers - Non-T&E - Mammals					-	-	-	-	0.38
ODEQ ECORBC - 2020 - Soil - Invertebrates					-	-	-	-	5.00E+06
Terraphase	WS-IMS	0 - 0.5	WS-IMS-0-0.5	05/22/2024	<2.49	<2.49	2.11	<0.499	2.35
		0 - 0.5	WS-IMS-0-0.5-DUP	05/23/2024	<2.51	<2.51	2.23	0.679	3.59
			WS-IMS-0-0.5-TRP		<2.55	<2.55	2.15	<0.51	2.83
Parametrix	BM-B-5	1.0	BM-B-5-1.0	01/18/17	ND (0.929)	ND (0.305)	ND (0.435)	ND (0.377)	0.003
	BM-B-7	1.0	BM-B-7-1.0	01/18/17	ND (0.929)	ND (0.349)	ND (0.343)	ND (0.370)	0.046
	BM-B-20	1.0	BM-B-20-1.0	01/17/17	ND (0.675)	ND (0.256)	ND (0.482)	ND (0.399)	0.002

Notes:

Detected concentrations are **bold-faced**

mg/kg= milligrams per kilogram

- = Not available

< = analyte not detected at or above laboratory reporting limit

J = concentration found below the lower quantitation limit but greater than zero

ft-bgs = feet below ground surface

ODEQ = Oregon Department of Environmental Quality

RBC = Risk-Based Concentration

¹ Total Toxic Equivalency based on 2005 World Health Organization Toxic Equivalent Factors

ODEQ ECORBC Total Toxic Equivalency screening levels are shaded when one or more sample result exceeds it.

IMS = Incremental Sampling Method (USEPA 2019)

Table 4
Groundwater Analytical Results
Phase II Environmental Assessment Report
Highway 101 Former Mill Site

					Metals											
Consultant	Location Code	Sample Depth (ft-bgs)	Field ID	Date	Total Arsenic µg/L	Dissolved Arsenic µg/L	Total Barium µg/L	Dissolved Barium µg/L	Total Cadmium µg/L	Dissolved Cadmium µg/L	Total Chromium (III+VI) µg/L	Dissolved Chromium (III+VI) µg/L	Total Lead µg/L	Dissolved Lead µg/L	Total Mercury µg/L	
ODEQ RBC - 2023 - Groundwater - Groundwater in Excavation - Construction and Excavation Workers					6,300	6,300	-	-	130,000	130,000	-	-	-	-	-	-
ODEQ ECORBCs - 2020- Freshwater - Aquatic Species ¹					150	150	220	220	0.094	0.094	11 ²	11 ²	0.54	0.54	0.0013	
ODEQ ECORBCs - 2020- Saltwater - Aquatic Species ¹					36	36	4	4	7.9	7.9	50 ²	50 ²	5.6	5.6	0.025	
Terraphase	WS-SB-01	5 - 15	WS-SB-1-GW-5-15	05/22/2024	-	<1.00	-	<2.00	-	<0.200	-	<2.00	-	<0.200	-	
	WS-SB-02	15 - 20	WS-SB-2-GW-15-20	05/22/2024	-	2.30	-	142 D	-	<2.00	-	2.61	-	<2.00	-	
	WS-SB-03	10 - 20	WS-SB-3-GW-10-20	05/22/2024	-	1.61	-	33.6	-	<0.200	-	<2.00	-	<0.200	-	
			WS-SB-3-GW-10-20-DUP	05/22/2024	-	1.62	-	32.8	-	<0.200	-	<2.00	-	<0.200	-	
	WS-SB-04	15 - 20	WS-SB-4-GW-15-20	05/22/2024	-	<1.00	-	231 D	-	<0.200	-	<2.00	-	<0.200	-	
	WS-SB-05	10 - 20	WS-SB-5-GW-10-20	05/22/2024	-	2.20	-	312 D	-	<0.200	-	<2.00	-	<0.200	-	
	WS-SB-06	10 - 15	WS-SB-6-GW-10-15	05/21/2024	-	1.47	-	76.8	-	<0.200	-	2.27	-	<0.200	-	
	WS-SB-07	15 - 20	WS-SB-7-GW-15-20	05/21/2024	-	<1.00	-	6.30	-	<0.200	-	<2.00	-	<0.200	-	
	WS-SB-08	9.5 - 14.5	WS-SB-8-GW-9.5-14.5	05/21/2024	-	4.14	-	<2.00	-	<0.200	-	<2.00	-	<0.200	-	
	WS-SB-09	9 - 14	WS-SB-9-GW-9-14	05/21/2024	-	2.86	-	2.12	-	<0.200	-	<2.00	-	<0.200	-	
EB	-	WS-RS-EB-20240522	05/22/2024	-	<1.00	-	<2.00	-	<0.200	-	<2.00	-	<0.200	-		
		WS-SB-EB-20240521	05/21/2024	-	-	-	-	-	-	-	-	-	-	-		
		WS-SB-EB-20240522	05/22/2024	-	-	-	-	-	-	-	-	-	-	-		
Parametrix	BM-B-1	-	BM-B-1-W	01/18/17	12.6	-	194	-	ND (<0.100)	-	7.35	-	48.1	-	ND (<0.100)	
	BM-B-5	-	BM-B-5-W	01/18/17	3.77	2.1	86.4	56.9	0.474	0.409	19.2	5.66	64.6	49.9	ND (<0.100)	
	BM-B-7	-	BM-B-7-W	01/18/17	8.96	-	199	-	0.502	-	5.01	-	55.8	-	ND (<0.100)	
	BM-B-12	-	BM-B-12-W	01/17/17	25.4	16.1	127	83	0.143	ND (<0.100)	15.7	0.607	11.7	0.207	ND (<0.100)	
	BM-B-15	-	BM-B-15-W	01/17/17	-	-	-	-	-	-	-	-	-	-	ND (<0.100)	
	BM-B-20	-	BM-B-20-W	01/17/17	0.736	-	12	-	ND (<0.100)	-	2.66	-	2.26	-	ND (<0.100)	
-		BM-B-20-W-D	01/17/17	0.619	-	9.65	-	ND (<0.100)	-	2.15	-	1.70	-	ND (<0.100)		

Table 4
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Consultant	Location Code	Sample Depth (ft-bgs)	Field ID	Date	Metals					PAH					
					Dissolved Mercury µg/L	Total Selenium µg/L	Dissolved Selenium µg/L	Total Silver µg/L	Dissolved Silver µg/L	1-Methylnaphthalene µg/L	2-Methylnaphthalene µg/L	Acenaphthene µg/L	Acenaphthylene µg/L	Anthracene µg/L	Benz(a)anthracene µg/L
ODEQ RBC - 2023 - Groundwater - Groundwater in Excavation - Construction and Excavation Workers					-	-	-	1,100,000	1,100,000	-	-	-	-	-	-
ODEQ ECORBCs - 2020- Freshwater - Aquatic Species ¹					0.0013	4.6	4.6	0.1	0.1	6.1	4.7	15	13	0.02	4.7
ODEQ ECORBCs - 2020- Saltwater - Aquatic Species ¹					0.025	71	71	0.1	0.1	52	52	15	28	0.43	0.35
Terraphase	WS-SB-01	5 - 15	WS-SB-1-GW-5-15	05/22/2024	<0.0800	-	<1.00	-	<0.200	<0.0426	<0.0426	<0.0213	<0.0213	<0.0213	<0.0213
	WS-SB-02	15 - 20	WS-SB-2-GW-15-20	05/22/2024	<0.800	-	<1.00	-	<2.00	<0.0690	<0.0690	<0.0345	<0.0345	<0.0345	<0.0345
	WS-SB-03	10 - 20	WS-SB-3-GW-10-20	05/22/2024	<0.0800	-	<1.00	-	<0.200	<0.0385	<0.0385	<0.0192	<0.0192	<0.0192	<0.0192
			WS-SB-3-GW-10-20-DUP	05/22/2024	<0.0800	-	<1.00	-	<0.200	<0.0377	<0.0377	<0.0189	<0.0189	<0.0189	<0.0189
	WS-SB-04	15 - 20	WS-SB-4-GW-15-20	05/22/2024	<0.0800	-	<1.00	-	<0.200	<0.0400	<0.0400	<0.0200	<0.0200	<0.0200	<0.0200
	WS-SB-05	10 - 20	WS-SB-5-GW-10-20	05/22/2024	<0.0800	-	1.29	-	<0.200	0.0431	<0.0396	0.0248	<0.0198	0.0198	<0.0198
	WS-SB-06	10 - 15	WS-SB-6-GW-10-15	05/21/2024	<0.0800	-	<1.00	-	<0.200	<0.0556	<0.0556	<0.0278	<0.0278	<0.0278	<0.0278
	WS-SB-07	15 - 20	WS-SB-7-GW-15-20	05/21/2024	<0.0800	-	<1.00	-	<0.200	<0.0440	<0.0440	<0.0220	<0.0220	<0.0220	<0.0220
	WS-SB-08	9.5 - 14.5	WS-SB-8-GW-9.5-14.5	05/21/2024	<0.0800	-	<1.00	-	<0.200	<0.0471	<0.0471	<0.0235	<0.0235	<0.0235	<0.0235
	WS-SB-09	9 - 14	WS-SB-9-GW-9-14	05/21/2024	<0.0800	-	<1.00	-	<0.200	<0.0377	<0.0377	<0.0189	<0.0189	<0.0189	<0.0189
EB	-	WS-RS-EB-20240522	05/22/2024	<0.0800	-	<1.00	-	<0.200	<0.0506	<0.0506	<0.0253	<0.0253	<0.0253	<0.0253	
		WS-SB-EB-20240521	05/21/2024	-	-	-	-	-	<0.0494	<0.0494	<0.0247	<0.0247	<0.0247	<0.0247	
		WS-SB-EB-20240522	05/22/2024	-	-	-	-	-	<0.0388	<0.0388	<0.0194	<0.0194	<0.0194	<0.0194	
Parametrix	BM-B-1	-	BM-B-1-W	01/18/17	-	ND (<1.0)	-	ND (<0.100)	-	-	-	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)
	BM-B-5	-	BM-B-5-W	01/18/17	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<0.100)	ND (<0.100)	-	-	0.0944	0.227	0.208	0.359
	BM-B-7	-	BM-B-7-W	01/18/17	-	1.24	-	0.133	-	-	-	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)
	BM-B-12	-	BM-B-12-W	01/17/17	ND (<0.100)	ND (<1.0)	ND (<1.0)	0.164	ND (<0.100)	-	-	-	-	-	-
	BM-B-15	-	BM-B-15-W	01/17/17	-	-	-	-	-	-	-	-	-	-	-
	BM-B-20	-	BM-B-20-W	01/17/17	-	ND (<1.0)	-	ND (<0.100)	-	-	-	-	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)
-		BM-B-20-W-D	01/17/17	-	ND (<1.0)	-	ND (<0.100)	-	-	-	-	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)

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					PAH											
Consultant	Location Code	Sample Depth (ft-bgs)	Field ID	Date	Benzo(a)pyrene µg/L	Benzo(b)fluoranthene µg/L	Benzo(g,h,i)perylene µg/L	Benzo(k)fluoranthene µg/L	Chrysene µg/L	Dibenz(a,h)anthracene µg/L	Dibenzofuran µg/L	Fluoranthene µg/L	Fluorene µg/L	Indeno(1,2,3-c,d)pyrene µg/L	Naphthalene µg/L	
ODEQ RBC - 2023 - Groundwater - Groundwater in Excavation - Construction and Excavation Workers					-	-	-	-	-	-	-	-	-	-	-	500
ODEQ ECORBCs - 2020- Freshwater - Aquatic Species ¹					0.06	2.6	0.012	0.06	4.7	0.012	4	0.8	19	0.012	21	
ODEQ ECORBCs - 2020- Saltwater - Aquatic Species ¹					0.02	0.06	0.012	0.06	0.35	0.01	61	0.82	24	0.012	1.4	
Terraphase	WS-SB-01	5 - 15	WS-SB-1-GW-5-15	05/22/2024	<0.0319	<0.0319	<0.0213	<0.0319	<0.0213	<0.0213	<0.0213	<0.0213	<0.0213	<0.0213	<0.0426	
	WS-SB-02	15 - 20	WS-SB-2-GW-15-20	05/22/2024	<0.0517	<0.0517	<0.0345	<0.0517	<0.0345	<0.0345	<0.0345	<0.0345	<0.0345	<0.0345	<0.0690	
	WS-SB-03	10 - 20	WS-SB-3-GW-10-20	05/22/2024	<0.0288	<0.0288	<0.0192	<0.0288	<0.0192	<0.0192	<0.0192	<0.0192	<0.0192	<0.0192	<0.0385	
			WS-SB-3-GW-10-20-DUP	05/22/2024	<0.0283	<0.0283	<0.0189	<0.0283	<0.0189	<0.0189	<0.0189	<0.0189	<0.0189	<0.0189	<0.0377	
	WS-SB-04	15 - 20	WS-SB-4-GW-15-20	05/22/2024	<0.0300	<0.0300	<0.0200	<0.0300	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0400	
	WS-SB-05	10 - 20	WS-SB-5-GW-10-20	05/22/2024	<0.0297	<0.0297	<0.198	<0.0297	<0.0198	<0.198	<0.0198	<0.0198	0.0251	<0.198	0.126	
	WS-SB-06	10 - 15	WS-SB-6-GW-10-15	05/21/2024	<0.0417	<0.0417	<0.0278	<0.0417	<0.0278	<0.0278	<0.0278	<0.0278	<0.0278	<0.0278	<0.0556	
	WS-SB-07	15 - 20	WS-SB-7-GW-15-20	05/21/2024	<0.0330	<0.0330	<0.0220	<0.0330	<0.0220	<0.0220	<0.0220	<0.0220	<0.0220	<0.0220	<0.0440	
	WS-SB-08	9.5 - 14.5	WS-SB-8-GW-9.5-14.5	05/21/2024	<0.0353	<0.0353	<0.0235	<0.0353	<0.0235	<0.0235	<0.0235	<0.0235	<0.0235	<0.0235	<0.0471	
	WS-SB-09	9 - 14	WS-SB-9-GW-9-14	05/21/2024	<0.0283	<0.0283	<0.0189	<0.0283	<0.0189	<0.0189	<0.0189	<0.0189	<0.0189	<0.0189	<0.0377	
EB	-	WS-RS-EB-20240522	05/22/2024	<0.0380	<0.0380	<0.0253	<0.0380	<0.0253	<0.0253	<0.0253	<0.0253	<0.0253	<0.0253	<0.0253	<0.0506	
		WS-SB-EB-20240521	05/21/2024	<0.0370	<0.0370	<0.0247	<0.0370	<0.0247	<0.0247	<0.0247	<0.0247	<0.0247	<0.0247	<0.0247	<0.0494	
		WS-SB-EB-20240522	05/22/2024	<0.0291	<0.0291	<0.0194	<0.0291	<0.0194	<0.0194	<0.0194	<0.0194	<0.0194	<0.0194	<0.0194	<0.0388	
Parametrix	BM-B-1	-	BM-B-1-W	01/18/17	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	-	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	-	
	BM-B-5	-	BM-B-5-W	01/18/17	0.51	0.5	0.567	0.0661	0.406	0.151	-	0.878	0.236	0.368	-	
	BM-B-7	-	BM-B-7-W	01/18/17	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	-	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	-	
	BM-B-12	-	BM-B-12-W	01/17/17	-	-	-	-	-	-	-	-	-	-	-	
	BM-B-15	-	BM-B-15-W	01/17/17	-	-	-	-	-	-	-	-	-	-	-	
	BM-B-20	-	BM-B-20-W	01/17/17	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	-	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	-
-		BM-B-20-W-D	01/17/17	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	-	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	-	

Table 4
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Consultant	Location Code	Sample Depth (ft-bgs)	Field ID	Date	PAH			TPH			
					Pentachlorophenol µg/L	Phenanthrene µg/L	Pyrene µg/L	TPH as Gasoline µg/L	TPH as Diesel µg/L	TPH as Hydraulic Oil µg/L	TPH as Motor Oil µg/L
ODEQ RBC - 2023 - Groundwater - Groundwater in Excavation - Construction and Excavation Workers					53	-	-	14,000	-	-	-
ODEQ ECORBCs - 2020- Freshwater - Aquatic Species ¹					6.7	2.3	4.6	440	640	640	640
ODEQ ECORBCs - 2020- Saltwater - Aquatic Species ¹					7.9	4.6	0.11	3700	640	640	640
Terraphase	WS-SB-01	5 - 15	WS-SB-1-GW-5-15	05/22/2024	<0.213	<0.0213	<0.0213	<96.2	<240	-	<240
	WS-SB-02	15 - 20	WS-SB-2-GW-15-20	05/22/2024	<0.345	<0.0345	0.0377	<106	<266	-	<266
	WS-SB-03	10 - 20	WS-SB-3-GW-10-20	05/22/2024	<0.192	<0.0192	<0.0192	<109	<272	-	<272
			WS-SB-3-GW-10-20-DUP	05/22/2024	<0.189	<0.0189	<0.0189	<94.3	<236	-	<236
	WS-SB-04	15 - 20	WS-SB-4-GW-15-20	05/22/2024	<0.200	<0.0200	<0.0200	<100	<284	-	<284
	WS-SB-05	10 - 20	WS-SB-5-GW-10-20	05/22/2024	<0.198	0.0518	0.0337	<100	<215	-	<269
	WS-SB-06	10 - 15	WS-SB-6-GW-10-15	05/21/2024	<0.278	<0.0278	<0.0278	173 F-03	304 F-17	-	<284
	WS-SB-07	15 - 20	WS-SB-7-GW-15-20	05/21/2024	<0.220	<0.0220	<0.0220	<108	<269	-	<269
	WS-SB-08	9.5 - 14.5	WS-SB-8-GW-9.5-14.5	05/21/2024	<0.235	<0.0235	<0.0235	<95.2	<238	-	<238
	WS-SB-09	9 - 14	WS-SB-9-GW-9-14	05/21/2024	<0.189	<0.0189	<0.0189	<102	<255	-	<255
EB	-	WS-RS-EB-20240522	05/22/2024	<0.253	<0.0253	<0.0253	<100	<250	-	<250	
		WS-SB-EB-20240521	05/21/2024	<0.247	<0.0247	<0.0247	<111	<278	-	<278	
		WS-SB-EB-20240522	05/22/2024	<0.194	<0.0194	<0.0194	<98.0	<245	-	<245	
Parametrix	BM-B-1	-	BM-B-1-W	01/18/17	-	ND (<0.0474)	ND (<0.0474)	-	ND (<75.5)	3,380	ND (<189)
	BM-B-5	-	BM-B-5-W	01/18/17	-	0.434	1.48	-	204	-	1,070
	BM-B-7	-	BM-B-7-W	01/18/17	-	ND (<0.0472)	ND (<0.0472)	-	ND (<75.6)	-	ND (<189)
	BM-B-12	-	BM-B-12-W	01/17/17	-	-	-	-	139	-	260
	BM-B-15	-	BM-B-15-W	01/17/17	-	-	-	-	ND (<77.0)	-	ND (<192)
	BM-B-20	-	BM-B-20-W	01/17/17	-	ND (<0.0468)	ND (<0.0468)	-	ND (<75.9)	-	ND (<190)
-		BM-B-20-W-D	01/17/17	-	ND (<0.0471)	ND (<0.0471)	-	ND (<76.5)	-	ND (<191)	

Table 4
Groundwater Analytical Results
Phase II Environmental Assessment Report
Highway 101 Former Mill Site

					VOCs				
Consultant	Location Code	Sample Depth (ft-bgs)	Field ID	Date	Acetone µg/L	Benzene µg/L	Ethylbenzene µg/L	Toluene µg/L	Xylenes (total) µg/L
ODEQ RBC - 2023 - Groundwater - Groundwater in Excavation - Construction and Excavation Workers					-	1,800	4,500	220,000	23,000
ODEQ ECORBCs - 2020- Freshwater - Aquatic Species ¹					1,700	160	61	62	27
ODEQ ECORBCs - 2020- Saltwater - Aquatic Species ¹					120,000	110	25	220	260
Terraphase	WS-SB-01	5 - 15	WS-SB-1-GW-5-15	05/22/2024	-	-	-	-	-
	WS-SB-02	15 - 20	WS-SB-2-GW-15-20	05/22/2024	-	-	-	-	-
	WS-SB-03	10 - 20	WS-SB-3-GW-10-20	05/22/2024	-	-	-	-	-
			WS-SB-3-GW-10-20-DUP	05/22/2024	-	-	-	-	-
	WS-SB-04	15 - 20	WS-SB-4-GW-15-20	05/22/2024	-	<0.200	<0.500	<1.00	<1.50
	WS-SB-05	10 - 20	WS-SB-5-GW-10-20	05/22/2024	-	-	-	-	-
	WS-SB-06	10 - 15	WS-SB-6-GW-10-15	05/21/2024	-	-	-	-	-
	WS-SB-07	15 - 20	WS-SB-7-GW-15-20	05/21/2024	-	-	-	-	-
	WS-SB-08	9.5 - 14.5	WS-SB-8-GW-9.5-14.5	05/21/2024	-	-	-	-	-
	WS-SB-09	9 - 14	WS-SB-9-GW-9-14	05/21/2024	-	-	-	-	-
EB	-	WS-RS-EB-20240522	05/22/2024	-	-	-	-	-	
		WS-SB-EB-20240521	05/21/2024	-	-	-	-	-	
		WS-SB-EB-20240522	05/22/2024	-	-	-	-	-	
Parametrix	BM-B-1	-	BM-B-1-W	01/18/17	ND (<50.0)	-	-	-	-
	BM-B-5	-	BM-B-5-W	01/18/17	ND (<50.0)	-	-	-	-
	BM-B-7	-	BM-B-7-W	01/18/17	ND (<50.0)	-	-	-	-
	BM-B-12	-	BM-B-12-W	01/17/17	ND (<50.0)	-	-	-	-
	BM-B-15	-	BM-B-15-W	01/17/17	-	-	-	-	-
	BM-B-20	-	BM-B-20-W	01/17/17	ND (<50.0)	-	-	-	-
BM-B-20-W-D			01/17/17	70.9	-	-	-	-	

Table 4

Groundwater Analytical Results

Phase II Environmental Assessment Report

Highway 101 Former Mill Site

Notes:

Detected concentrations are **bold-faced**

µg/L= micrograms per Liter

- = Not available/Not analyzed

< = analyte not detected at or above laboratory reporting limit

D = reported result is from a dilution

F-03 = The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.

F-17 = No fuel pattern detected. The Diesel result represents carbon range C10 to C25, and the Oil result represents >C25 to C40.

ft-bgs = feet below ground surface

ODEQ = Oregon Department of Environmental Quality

RBC = Risk-Based Concentration

EB = Equipment Blank

¹The lower of chronic or acute values

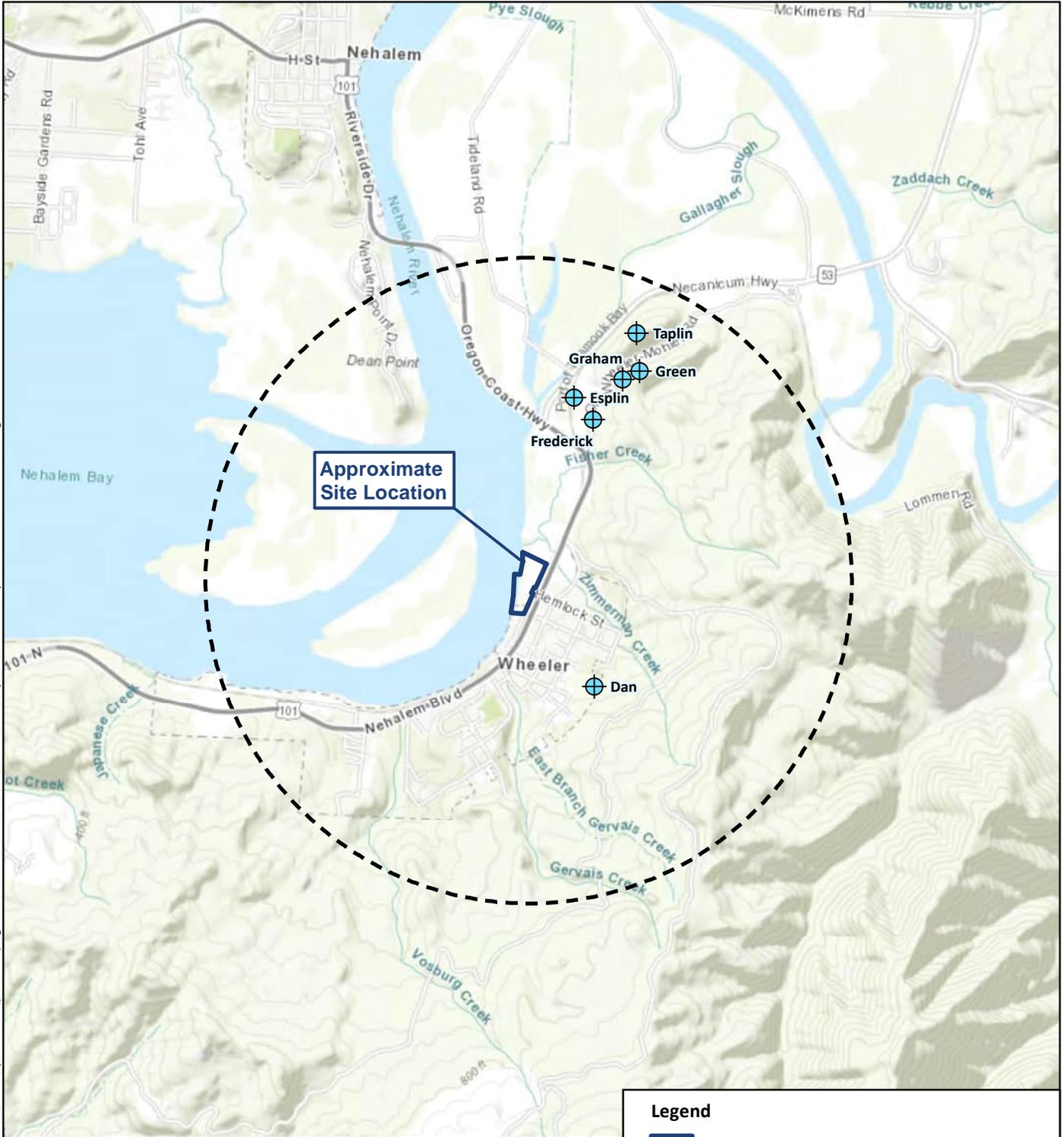
²Chromium VI

Figures

- 1 Site Location Map
- 2 Site Map
- 3 Soil Sampling Results – TPH
- 4 Soil Sampling Results - PAH
- 5 Riverbank Sediment Sampling Results
- 6 Groundwater Sampling Results – Metals, TPH, and VOCs
- 7 Groundwater Sampling Results – PAH
- 8 Conceptual Site Model



File: N:\GIS\Prj\0053_005_Tillamook County_Phi ESAs\005_Wheeler\MXDs\updated Ph I\20241126\ Figure 1 - Site Location.mxd 12/17/2024. Created by: ALV. Coordinate System: NAD 1983 StatePlane Oregon North FIPS 3601 Feet



Legend

-  Approximate Site Location
-  One Mile Radius
-  Water Well (Domestic)

Base Map: ESRI World Topographic Map
(data providers include HERE, Garmin, USGS, et al.)

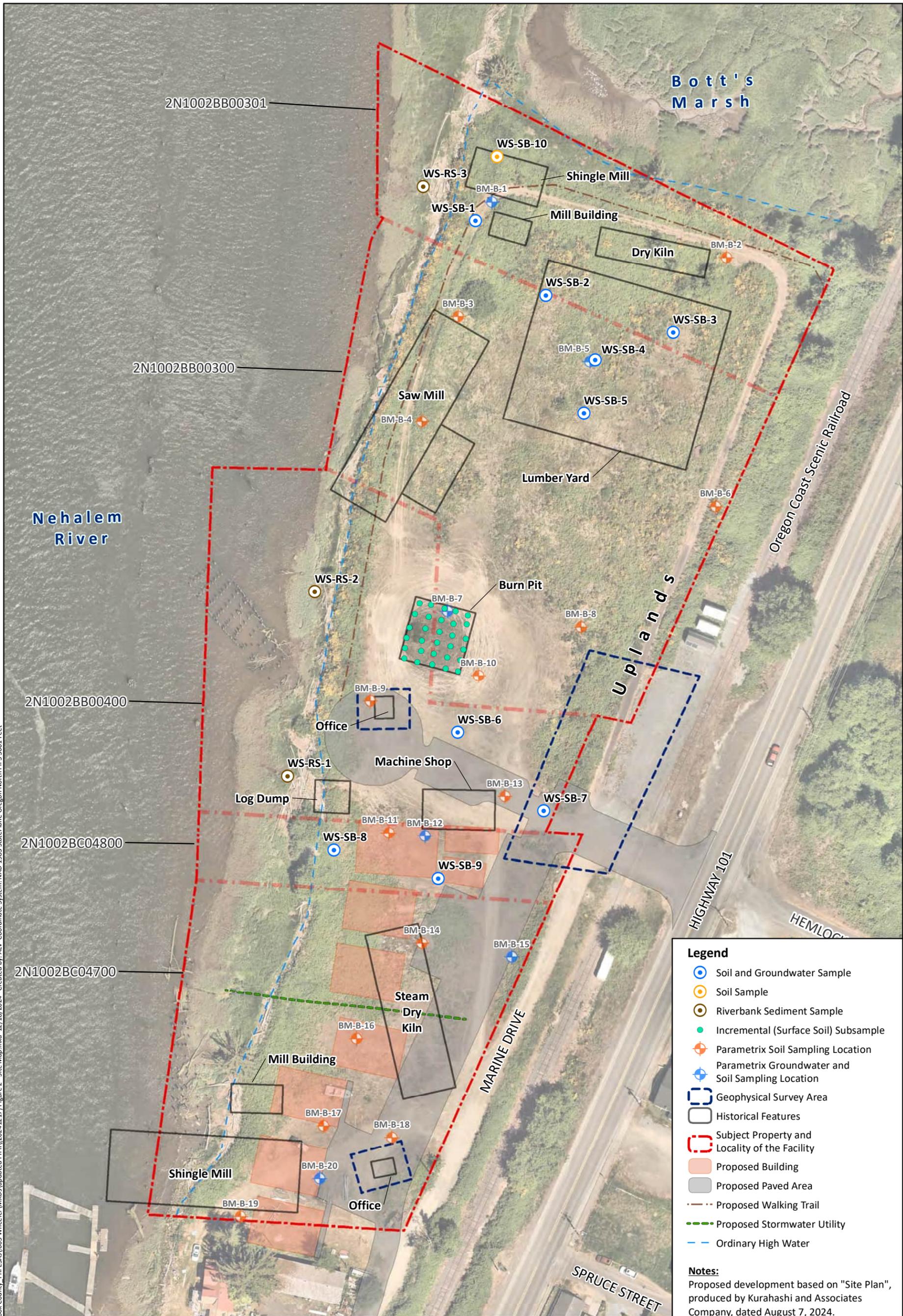
SAFETY FIRST



CLIENT:	Tillamook County
PROJECT:	Highway 101 Former Mill Site Highway 101, Wheeler, OR
PROJECT NUMBER:	0053.009.004

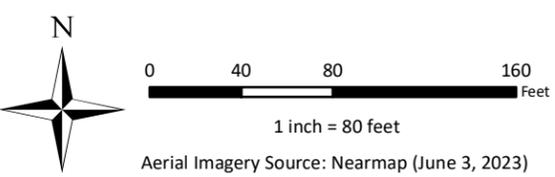
Site Location

FIGURE 1



- Legend**
- Soil and Groundwater Sample
 - Soil Sample
 - Riverbank Sediment Sample
 - Incremental (Surface Soil) Subsample
 - + Parametrix Soil Sampling Location
 - + Parametrix Groundwater and Soil Sampling Location
 - Geophysical Survey Area
 - Historical Features
 - Subject Property and Locality of the Facility
 - Proposed Building
 - Proposed Paved Area
 - Proposed Walking Trail
 - Proposed Stormwater Utility
 - Ordinary High Water

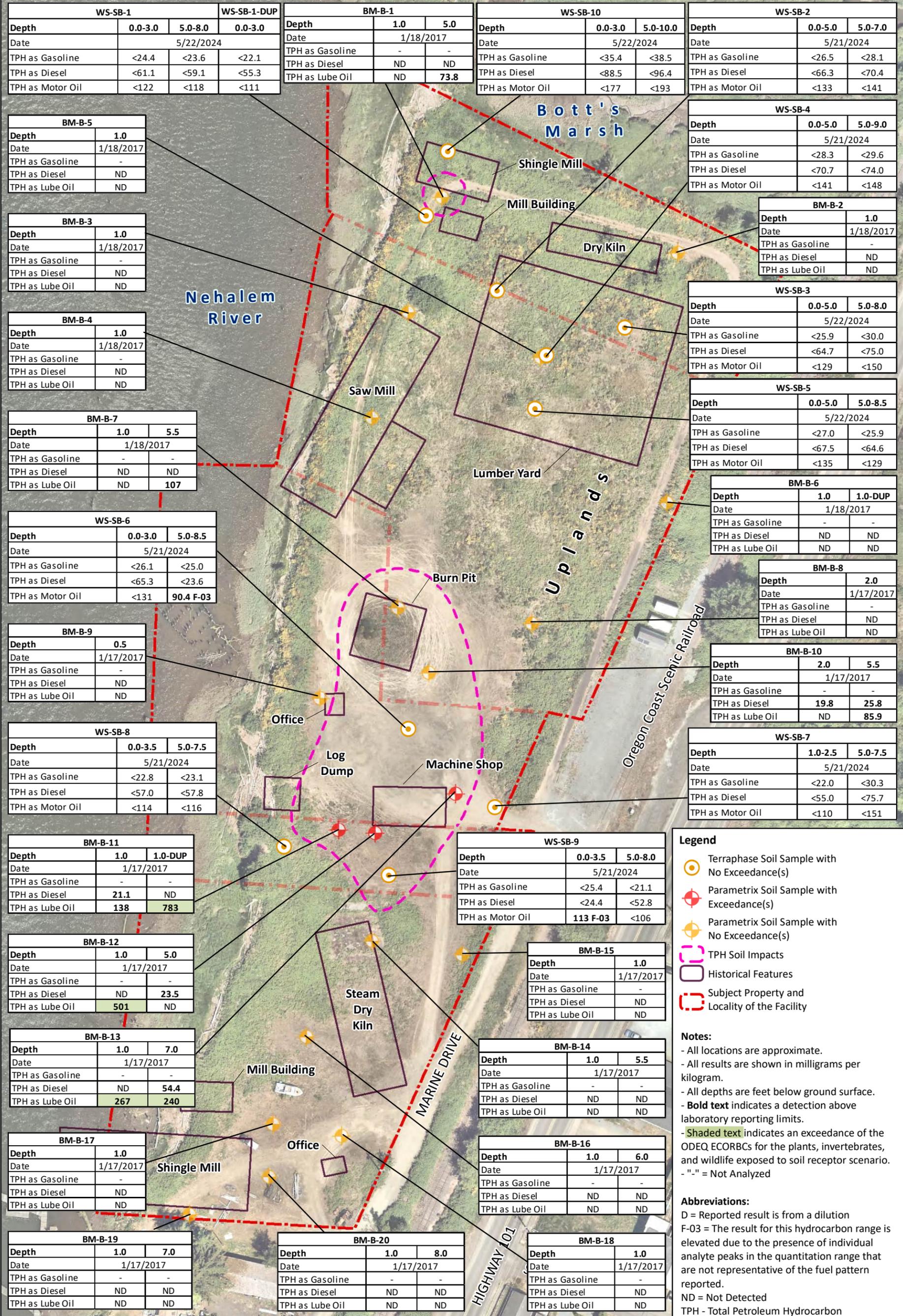
Notes:
 Proposed development based on "Site Plan", produced by Kurahashi and Associates Company, dated August 7, 2024.



<p>SAFETY FIRST</p>	CLIENT:	Tillamook County	<p>Site Map</p> <p>FIGURE 2</p>
	PROJECT:	Highway 101 Former Mill Site Highway 101, Wheeler, OR	
	PROJECT NUMBER:	O053.009.004	

File: N:\GIS\Prj\0053_005 Wheeler\MXDs\updated Ph I\2024\12\17\Figure 2 - Site Map.mxd 12/18/2024 Created by: ALV Coordinate System: NAD 1983 StatePlane Oregon North FIPS 3601 Feet

File: N:\GIS\Proj\0053.005 Wheeler\MXDs\Updated\Ph 1\20250103\Figure 3 - Soil Sampling Results-TPH.mxd 1/3/2025 Created by: ALV Coordinate System: NAD 1983 StatePlane Oregon North FIPS 3601 Feet



Legend

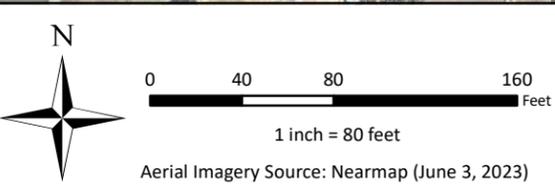
- Terraphase Soil Sample with No Exceedance(s)
- Parametrix Soil Sample with Exceedance(s)
- Parametrix Soil Sample with No Exceedance(s)
- TPH Soil Impacts
- Historical Features
- Subject Property and Locality of the Facility

Notes:

- All locations are approximate.
- All results are shown in milligrams per kilogram.
- All depths are feet below ground surface.
- **Bold text** indicates a detection above laboratory reporting limits.
- **Shaded text** indicates an exceedance of the ODEQ ECORBCs for the plants, invertebrates, and wildlife exposed to soil receptor scenario.
- "-" = Not Analyzed

Abbreviations:

- D = Reported result is from a dilution
- F-03 = The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
- ND = Not Detected
- TPH - Total Petroleum Hydrocarbon



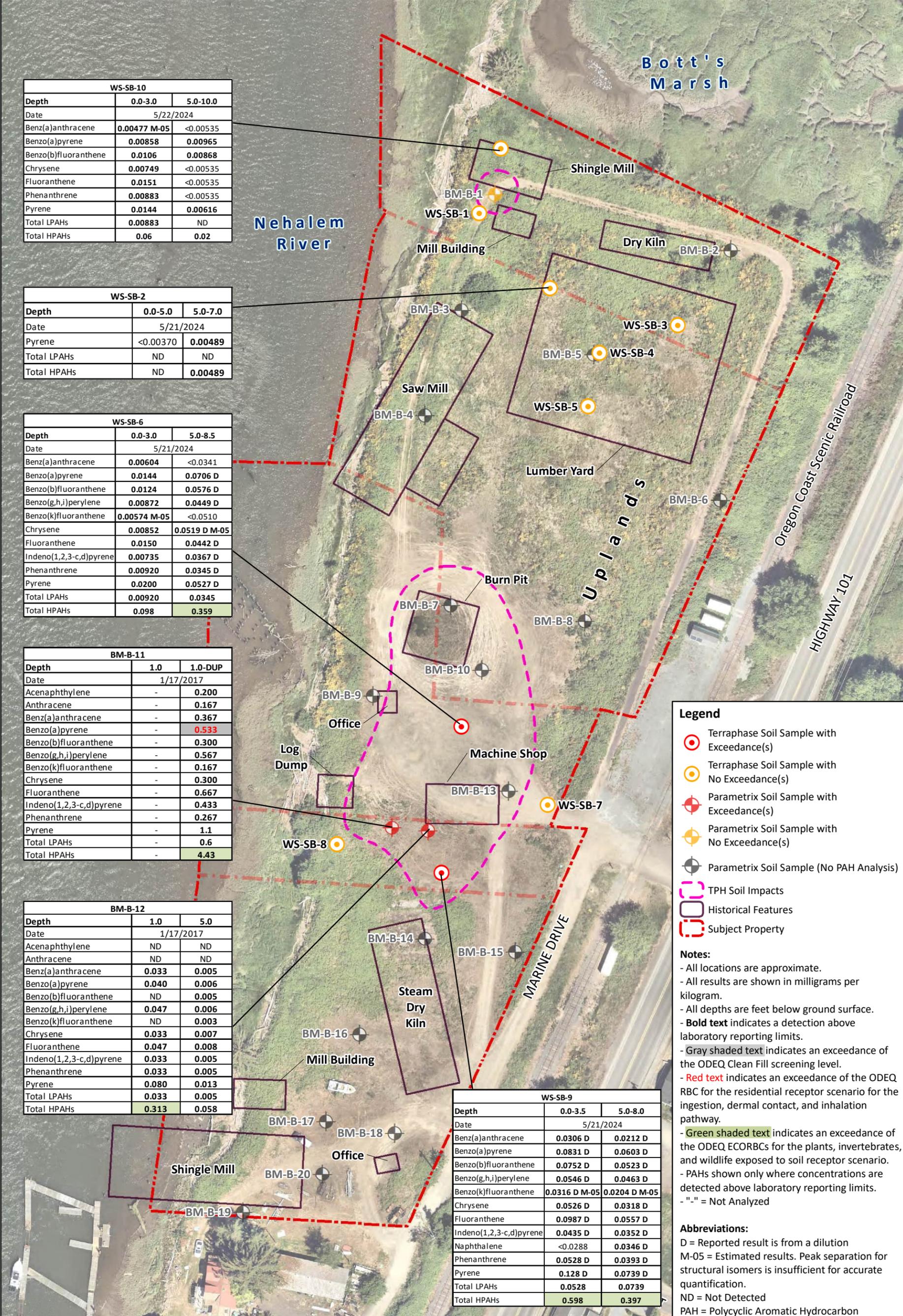
SAFETY FIRST

CLIENT: Tillamook County
 PROJECT: Highway 101 Former Mill Site
 Highway 101, Wheeler, OR
 PROJECT NUMBER: 0053.009.004

Soil Sampling Results - TPH

FIGURE 3

File: N:\GIS\Proj\0053.005 Wheeler\MXDs\update\Ph 1\20250103\Figure 4 - Soil Sampling Results-PAH.mxd 1/3/2025 Created by: ALV Coordinate System: NAD 1983 StatePlane Oregon North FIPS 3601 Feet



WS-SB-10		
Depth	0.0-3.0	5.0-10.0
Date	5/22/2024	
Benz(a)anthracene	0.00477 M-05	<0.00535
Benzo(a)pyrene	0.00858	0.00965
Benzo(b)fluoranthene	0.0106	0.00868
Chrysene	0.00749	<0.00535
Fluoranthene	0.0151	<0.00535
Phenanthrene	0.00883	<0.00535
Pyrene	0.0144	0.00616
Total LPAHs	0.00883	ND
Total HPAHs	0.06	0.02

WS-SB-2		
Depth	0.0-5.0	5.0-7.0
Date	5/21/2024	
Pyrene	<0.00370	0.00489
Total LPAHs	ND	ND
Total HPAHs	ND	0.00489

WS-SB-6		
Depth	0.0-3.0	5.0-8.5
Date	5/21/2024	
Benz(a)anthracene	0.00604	<0.0341
Benzo(a)pyrene	0.0144	0.0706 D
Benzo(b)fluoranthene	0.0124	0.0576 D
Benzo(g,h,i)perylene	0.00872	0.0449 D
Benzo(k)fluoranthene	0.00574 M-05	<0.0510
Chrysene	0.00852	0.0519 D M-05
Fluoranthene	0.0150	0.0442 D
Indeno(1,2,3-c,d)pyrene	0.00735	0.0367 D
Phenanthrene	0.00920	0.0345 D
Pyrene	0.0200	0.0527 D
Total LPAHs	0.00920	0.0345
Total HPAHs	0.098	0.359

BM-B-11		
Depth	1.0	1.0-DUP
Date	1/17/2017	
Acenaphthylene	-	0.200
Anthracene	-	0.167
Benzo(a)anthracene	-	0.367
Benzo(a)pyrene	-	0.533
Benzo(b)fluoranthene	-	0.300
Benzo(g,h,i)perylene	-	0.567
Benzo(k)fluoranthene	-	0.167
Chrysene	-	0.300
Fluoranthene	-	0.667
Indeno(1,2,3-c,d)pyrene	-	0.433
Phenanthrene	-	0.267
Pyrene	-	1.1
Total LPAHs	-	0.6
Total HPAHs	-	4.43

BM-B-12		
Depth	1.0	5.0
Date	1/17/2017	
Acenaphthylene	ND	ND
Anthracene	ND	ND
Benzo(a)anthracene	0.033	0.005
Benzo(a)pyrene	0.040	0.006
Benzo(b)fluoranthene	ND	0.005
Benzo(g,h,i)perylene	0.047	0.006
Benzo(k)fluoranthene	ND	0.003
Chrysene	0.033	0.007
Fluoranthene	0.047	0.008
Indeno(1,2,3-c,d)pyrene	0.033	0.005
Phenanthrene	0.033	0.005
Pyrene	0.080	0.013
Total LPAHs	0.033	0.005
Total HPAHs	0.313	0.058

WS-SB-9		
Depth	0.0-3.5	5.0-8.0
Date	5/21/2024	
Benz(a)anthracene	0.0306 D	0.0212 D
Benzo(a)pyrene	0.0831 D	0.0603 D
Benzo(b)fluoranthene	0.0752 D	0.0523 D
Benzo(g,h,i)perylene	0.0546 D	0.0463 D
Benzo(k)fluoranthene	0.0316 D M-05	0.0204 D M-05
Chrysene	0.0526 D	0.0318 D
Fluoranthene	0.0987 D	0.0557 D
Indeno(1,2,3-c,d)pyrene	0.0435 D	0.0352 D
Naphthalene	<0.0288	0.0346 D
Phenanthrene	0.0528 D	0.0393 D
Pyrene	0.128 D	0.0739 D
Total LPAHs	0.0528	0.0739
Total HPAHs	0.598	0.397

Legend

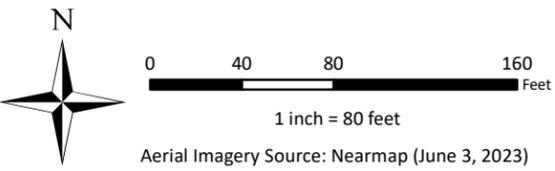
- Terraphase Soil Sample with Exceedance(s)
- Terraphase Soil Sample with No Exceedance(s)
- ⊕ Parametrix Soil Sample with Exceedance(s)
- ⊕ Parametrix Soil Sample with No Exceedance(s)
- ⊕ Parametrix Soil Sample (No PAH Analysis)
- TPH Soil Impacts
- Historical Features
- Subject Property

Notes:

- All locations are approximate.
- All results are shown in milligrams per kilogram.
- All depths are feet below ground surface.
- **Bold text** indicates a detection above laboratory reporting limits.
- Gray shaded text indicates an exceedance of the ODEQ Clean Fill screening level.
- Red text indicates an exceedance of the ODEQ RBC for the residential receptor scenario for the ingestion, dermal contact, and inhalation pathway.
- Green shaded text indicates an exceedance of the ODEQ ECORBCs for the plants, invertebrates, and wildlife exposed to soil receptor scenario.
- PAHs shown only where concentrations are detected above laboratory reporting limits.
- "-" = Not Analyzed

Abbreviations:

- D = Reported result is from a dilution
- M-05 = Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
- ND = Not Detected
- PAH = Polycyclic Aromatic Hydrocarbon



SAFETY FIRST

CLIENT: Tillamook County
 PROJECT: Highway 101 Former Mill Site Highway 101, Wheeler, OR
 PROJECT NUMBER: 0053.009.004

Soil Sampling Results - PAH

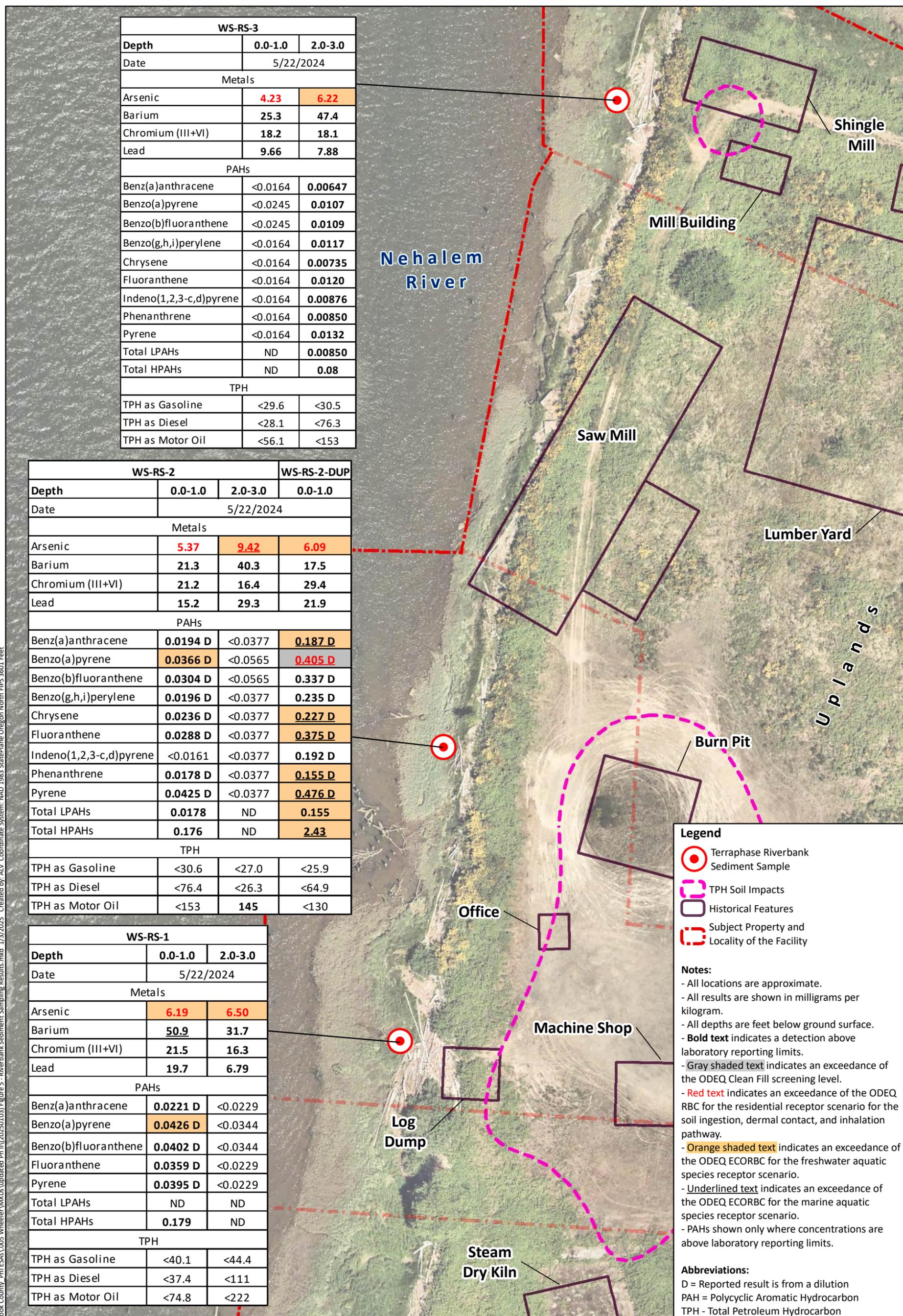
FIGURE 4

WS-RS-3		
Depth	0.0-1.0	2.0-3.0
Date	5/22/2024	
Metals		
Arsenic	4.23	6.22
Barium	25.3	47.4
Chromium (III+VI)	18.2	18.1
Lead	9.66	7.88
PAHs		
Benz(a)anthracene	<0.0164	0.00647
Benzo(a)pyrene	<0.0245	0.0107
Benzo(b)fluoranthene	<0.0245	0.0109
Benzo(g,h,i)perylene	<0.0164	0.0117
Chrysene	<0.0164	0.00735
Fluoranthene	<0.0164	0.0120
Indeno(1,2,3-c,d)pyrene	<0.0164	0.00876
Phenanthrene	<0.0164	0.00850
Pyrene	<0.0164	0.0132
Total LPAHs	ND	0.00850
Total HPAHs	ND	0.08
TPH		
TPH as Gasoline	<29.6	<30.5
TPH as Diesel	<28.1	<76.3
TPH as Motor Oil	<56.1	<153

WS-RS-2			WS-RS-2-DUP
Depth	0.0-1.0	2.0-3.0	0.0-1.0
Date	5/22/2024		
Metals			
Arsenic	5.37	9.42	6.09
Barium	21.3	40.3	17.5
Chromium (III+VI)	21.2	16.4	29.4
Lead	15.2	29.3	21.9
PAHs			
Benz(a)anthracene	0.0194 D	<0.0377	0.187 D
Benzo(a)pyrene	0.0366 D	<0.0565	0.405 D
Benzo(b)fluoranthene	0.0304 D	<0.0565	0.337 D
Benzo(g,h,i)perylene	0.0196 D	<0.0377	0.235 D
Chrysene	0.0236 D	<0.0377	0.227 D
Fluoranthene	0.0288 D	<0.0377	0.375 D
Indeno(1,2,3-c,d)pyrene	<0.0161	<0.0377	0.192 D
Phenanthrene	0.0178 D	<0.0377	0.155 D
Pyrene	0.0425 D	<0.0377	0.476 D
Total LPAHs	0.0178	ND	0.155
Total HPAHs	0.176	ND	2.43
TPH			
TPH as Gasoline	<30.6	<27.0	<25.9
TPH as Diesel	<76.4	<26.3	<64.9
TPH as Motor Oil	<153	145	<130

WS-RS-1		
Depth	0.0-1.0	2.0-3.0
Date	5/22/2024	
Metals		
Arsenic	6.19	6.50
Barium	50.9	31.7
Chromium (III+VI)	21.5	16.3
Lead	19.7	6.79
PAHs		
Benz(a)anthracene	0.0221 D	<0.0229
Benzo(a)pyrene	0.0426 D	<0.0344
Benzo(b)fluoranthene	0.0402 D	<0.0344
Fluoranthene	0.0359 D	<0.0229
Pyrene	0.0395 D	<0.0229
Total LPAHs	ND	ND
Total HPAHs	0.179	ND
TPH		
TPH as Gasoline	<40.1	<44.4
TPH as Diesel	<37.4	<111
TPH as Motor Oil	<74.8	<222

File: N:\GIS\Proj\0053\005 Tillamook County - Phi ES&S\005 Wheeler\MXDs\Updated\Phi (1/20/2025)01\03 Figure 5 - Riverbank Sediment Sampling Results.mxd 1/3/2025 Created by: ALV Coordinate System: NAD_1983 StatePlane Oregon North FIPS 3601 Feet



Legend

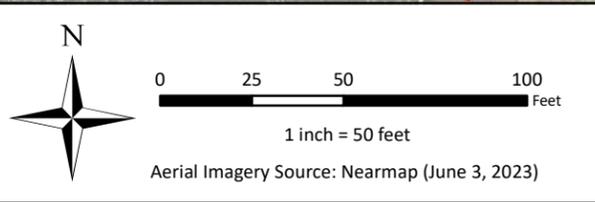
- Terraphase Riverbank Sediment Sample
- TPH Soil Impacts
- Historical Features
- Subject Property and Locality of the Facility

Notes:

- All locations are approximate.
- All results are shown in milligrams per kilogram.
- All depths are feet below ground surface.
- **Bold text** indicates a detection above laboratory reporting limits.
- **Gray shaded text** indicates an exceedance of the ODEQ Clean Fill screening level.
- **Red text** indicates an exceedance of the ODEQ RBC for the residential receptor scenario for the soil ingestion, dermal contact, and inhalation pathway.
- **Orange shaded text** indicates an exceedance of the ODEQ ECORBC for the freshwater aquatic species receptor scenario.
- **Underlined text** indicates an exceedance of the ODEQ ECORBC for the marine aquatic species receptor scenario.
- PAHs shown only where concentrations are above laboratory reporting limits.

Abbreviations:

- D = Reported result is from a dilution
- PAH = Polycyclic Aromatic Hydrocarbon
- TPH = Total Petroleum Hydrocarbon



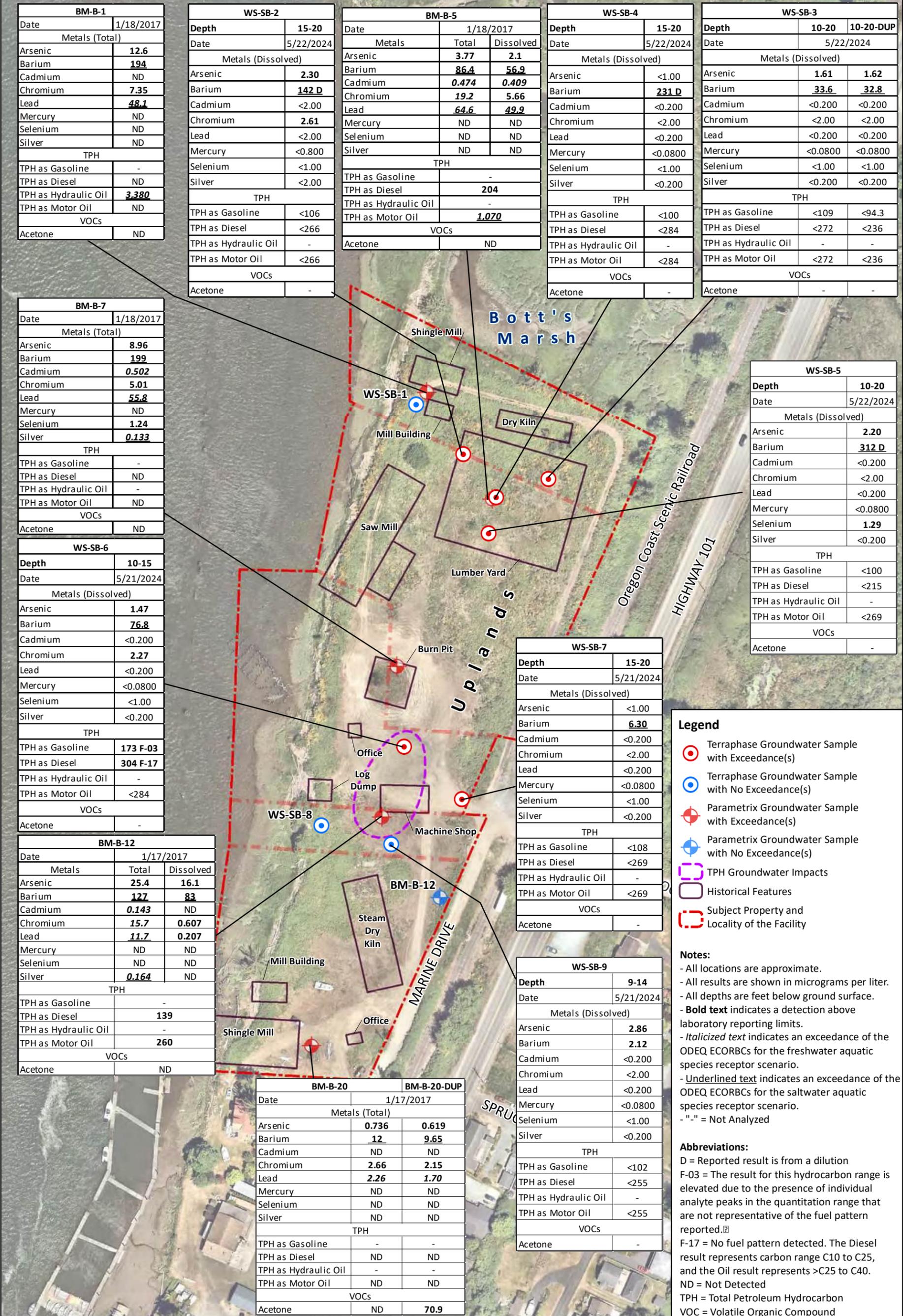
SAFETY FIRST

CLIENT:	Tillamook County
PROJECT:	Highway 101 Former Mill Site Highway 101, Wheeler, OR
PROJECT NUMBER:	0053.009.004

Riverbank Sediment Sampling Results

FIGURE 5

File: N:\GIS\Proj\0053.005\Wheeler\MXDs\Updated Ph I\20250103\Figure 6 - Groundwater Sampling Results - Metals, TPH, and VOCs (all results-not a water RBC).mxd 1/3/2025 Created by: ALV Coordinate System: NAD_1983 StatePlane Oregon North FIPS 3601 Feet



BM-B-1	
Date	1/18/2017
Metals (Total)	
Arsenic	12.6
Barium	194
Cadmium	ND
Chromium	7.35
Lead	48.1
Mercury	ND
Selenium	ND
Silver	ND
TPH	
TPH as Gasoline	-
TPH as Diesel	ND
TPH as Hydraulic Oil	3,380
TPH as Motor Oil	ND
VOCs	
Acetone	ND

WS-SB-2	
Depth	15-20
Date	5/22/2024
Metals (Dissolved)	
Arsenic	2.30
Barium	142 D
Cadmium	<2.00
Chromium	2.61
Lead	<2.00
Mercury	<0.800
Selenium	<1.00
Silver	<2.00
TPH	
TPH as Gasoline	<106
TPH as Diesel	<266
TPH as Hydraulic Oil	-
TPH as Motor Oil	<266
VOCs	
Acetone	-

BM-B-5		
Date	1/18/2017	
Metals		
	Total	Dissolved
Arsenic	3.77	2.1
Barium	86.4	56.9
Cadmium	0.474	0.409
Chromium	19.2	5.66
Lead	64.6	49.9
Mercury	ND	ND
Selenium	ND	ND
Silver	ND	ND
TPH		
TPH as Gasoline	-	
TPH as Diesel	204	
TPH as Hydraulic Oil	-	
TPH as Motor Oil	1,070	
VOCs		
Acetone	ND	

WS-SB-4	
Depth	15-20
Date	5/22/2024
Metals (Dissolved)	
Arsenic	<1.00
Barium	231 D
Cadmium	<0.200
Chromium	<2.00
Lead	<0.200
Mercury	<0.0800
Selenium	<1.00
Silver	<0.200
TPH	
TPH as Gasoline	<100
TPH as Diesel	<284
TPH as Hydraulic Oil	-
TPH as Motor Oil	<284
VOCs	
Acetone	-

WS-SB-3		
Depth	10-20	10-20-DUP
Date	5/22/2024	
Metals (Dissolved)		
Arsenic	1.61	1.62
Barium	33.6	32.8
Cadmium	<0.200	<0.200
Chromium	<2.00	<2.00
Lead	<0.200	<0.200
Mercury	<0.0800	<0.0800
Selenium	<1.00	<1.00
Silver	<0.200	<0.200
TPH		
TPH as Gasoline	<109	<94.3
TPH as Diesel	<272	<236
TPH as Hydraulic Oil	-	-
TPH as Motor Oil	<272	<236
VOCs		
Acetone	-	-

BM-B-7	
Date	1/18/2017
Metals (Total)	
Arsenic	8.96
Barium	199
Cadmium	0.502
Chromium	5.01
Lead	55.8
Mercury	ND
Selenium	1.24
Silver	0.133
TPH	
TPH as Gasoline	-
TPH as Diesel	ND
TPH as Hydraulic Oil	-
TPH as Motor Oil	ND
VOCs	
Acetone	ND

WS-SB-6	
Depth	10-15
Date	5/21/2024
Metals (Dissolved)	
Arsenic	1.47
Barium	76.8
Cadmium	<0.200
Chromium	2.27
Lead	<0.200
Mercury	<0.0800
Selenium	<1.00
Silver	<0.200
TPH	
TPH as Gasoline	173 F-03
TPH as Diesel	304 F-17
TPH as Hydraulic Oil	-
TPH as Motor Oil	<284
VOCs	
Acetone	-

BM-B-12		
Date	1/17/2017	
Metals		
	Total	Dissolved
Arsenic	25.4	16.1
Barium	127	83
Cadmium	0.143	ND
Chromium	15.7	0.607
Lead	11.7	0.207
Mercury	ND	ND
Selenium	ND	ND
Silver	0.164	ND
TPH		
TPH as Gasoline	-	
TPH as Diesel	139	
TPH as Hydraulic Oil	-	
TPH as Motor Oil	260	
VOCs		
Acetone	ND	

BM-B-20		
Date	1/17/2017	
Metals (Total)		
Arsenic	0.736	0.619
Barium	12	9.65
Cadmium	ND	ND
Chromium	2.66	2.15
Lead	2.26	1.70
Mercury	ND	ND
Selenium	ND	ND
Silver	ND	ND
TPH		
TPH as Gasoline	-	-
TPH as Diesel	ND	ND
TPH as Hydraulic Oil	-	-
TPH as Motor Oil	ND	ND
VOCs		
Acetone	ND	70.9

WS-SB-7	
Depth	15-20
Date	5/21/2024
Metals (Dissolved)	
Arsenic	<1.00
Barium	6.30
Cadmium	<0.200
Chromium	<2.00
Lead	<0.200
Mercury	<0.0800
Selenium	<1.00
Silver	<0.200
TPH	
TPH as Gasoline	<108
TPH as Diesel	<269
TPH as Hydraulic Oil	-
TPH as Motor Oil	<269
VOCs	
Acetone	-

WS-SB-9	
Depth	9-14
Date	5/21/2024
Metals (Dissolved)	
Arsenic	2.86
Barium	2.12
Cadmium	<0.200
Chromium	<2.00
Lead	<0.200
Mercury	<0.0800
Selenium	<1.00
Silver	<0.200
TPH	
TPH as Gasoline	<102
TPH as Diesel	<255
TPH as Hydraulic Oil	-
TPH as Motor Oil	<255
VOCs	
Acetone	-

WS-SB-5	
Depth	10-20
Date	5/22/2024
Metals (Dissolved)	
Arsenic	2.20
Barium	312 D
Cadmium	<0.200
Chromium	<2.00
Lead	<0.200
Mercury	<0.0800
Selenium	1.29
Silver	<0.200
TPH	
TPH as Gasoline	<100
TPH as Diesel	<215
TPH as Hydraulic Oil	-
TPH as Motor Oil	<269
VOCs	
Acetone	-

Legend

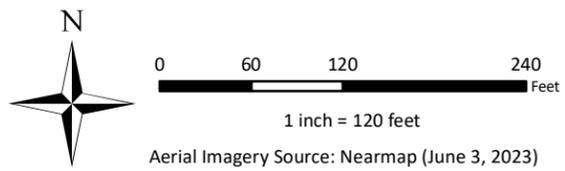
- Terraphase Groundwater Sample with Exceedance(s)
- Terraphase Groundwater Sample with No Exceedance(s)
- + Parametrix Groundwater Sample with Exceedance(s)
- + Parametrix Groundwater Sample with No Exceedance(s)
- TPH Groundwater Impacts
- Historical Features
- Subject Property and Locality of the Facility

Notes:

- All locations are approximate.
- All results are shown in micrograms per liter.
- All depths are feet below ground surface.
- **Bold text** indicates a detection above laboratory reporting limits.
- *Italicized text* indicates an exceedance of the ODEQ ECORBCs for the freshwater aquatic species receptor scenario.
- Underlined text indicates an exceedance of the ODEQ ECORBCs for the saltwater aquatic species receptor scenario.
- "-" = Not Analyzed

Abbreviations:

- D = Reported result is from a dilution
- F-03 = The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
- F-17 = No fuel pattern detected. The Diesel result represents carbon range C10 to C25, and the Oil result represents >C25 to C40.
- ND = Not Detected
- TPH = Total Petroleum Hydrocarbon
- VOC = Volatile Organic Compound



SAFETY FIRST

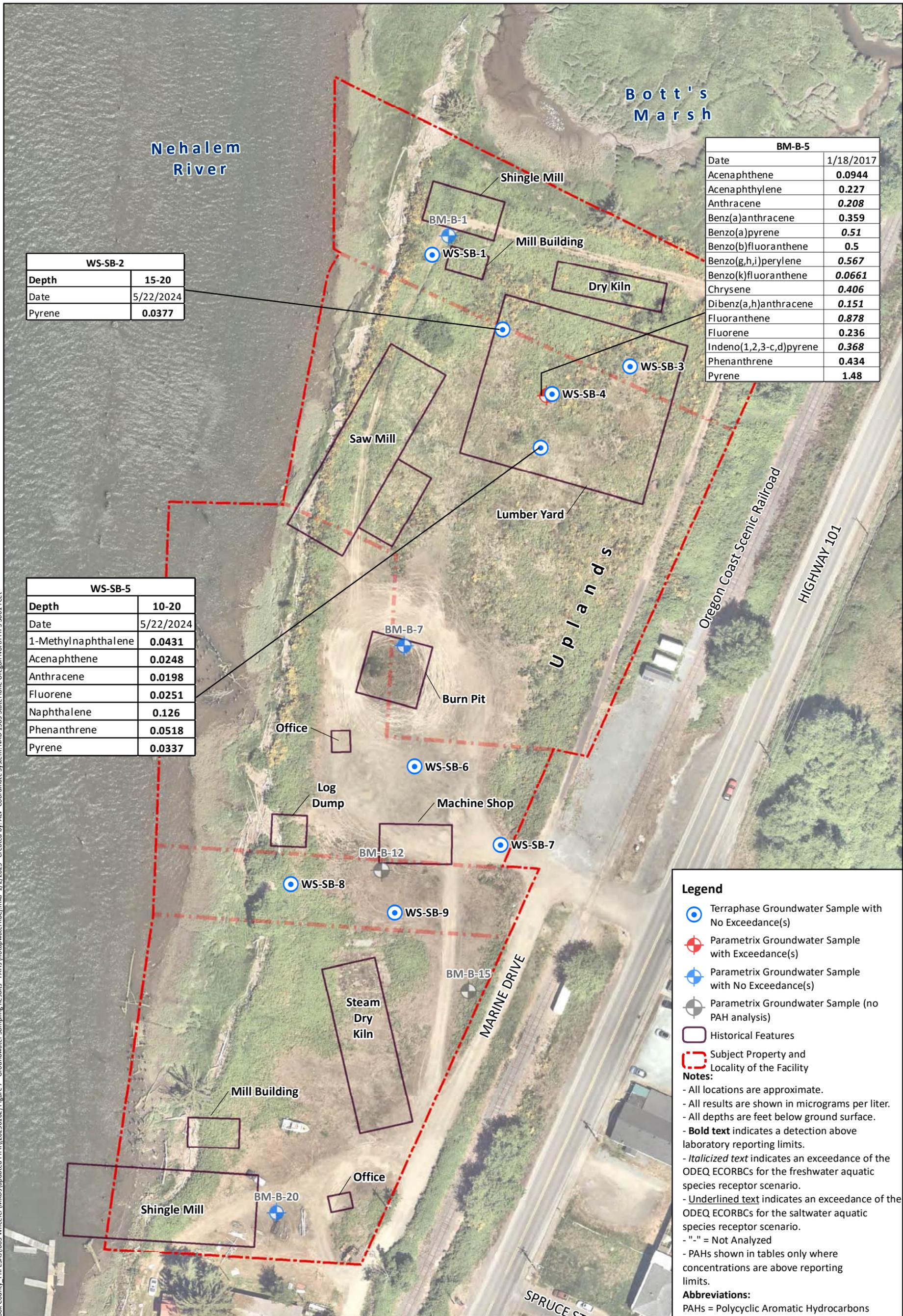
CLIENT: Tillamook County

PROJECT: Highway 101 Former Mill Site
Highway 101, Wheeler, OR

PROJECT NUMBER: 0053.009.004

**Groundwater Sampling Results -
Metals, TPH, and VOCs**

FIGURE 6



WS-SB-2	
Depth	15-20
Date	5/22/2024
Pyrene	0.0377

BM-B-5	
Date	1/18/2017
Acenaphthene	0.0944
Acenaphthylene	0.227
Anthracene	0.208
Benzo(a)anthracene	0.359
Benzo(a)pyrene	0.51
Benzo(b)fluoranthene	0.5
Benzo(g,h,i)perylene	0.567
Benzo(k)fluoranthene	0.0661
Chrysene	0.406
Dibenz(a,h)anthracene	0.151
Fluoranthene	0.878
Fluorene	0.236
Indeno(1,2,3-c,d)pyrene	0.368
Phenanthrene	0.434
Pyrene	1.48

WS-SB-5	
Depth	10-20
Date	5/22/2024
1-Methylnaphthalene	0.0431
Acenaphthene	0.0248
Anthracene	0.0198
Fluorene	0.0251
Naphthalene	0.126
Phenanthrene	0.0518
Pyrene	0.0337

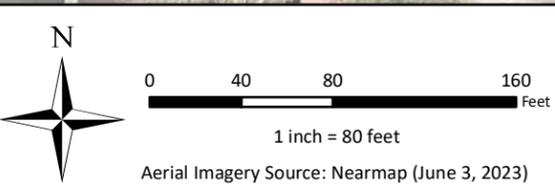
Legend

- Terraphase Groundwater Sample with No Exceedance(s)
- Parametrix Groundwater Sample with Exceedance(s)
- Parametrix Groundwater Sample with No Exceedance(s)
- Parametrix Groundwater Sample (no PAH analysis)
- Historical Features
- Subject Property and Locality of the Facility

Notes:

- All locations are approximate.
- All results are shown in micrograms per liter.
- All depths are feet below ground surface.
- **Bold text** indicates a detection above laboratory reporting limits.
- *Italicized text* indicates an exceedance of the ODEQ ECORBCs for the freshwater aquatic species receptor scenario.
- Underlined text indicates an exceedance of the ODEQ ECORBCs for the saltwater aquatic species receptor scenario.
- "-" = Not Analyzed
- PAHs shown in tables only where concentrations are above reporting limits.

Abbreviations:
PAHs = Polycyclic Aromatic Hydrocarbons



SAFETY FIRST

CLIENT: Tillamook County

PROJECT: Highway 101 Former Mill Site
Highway 101, Wheeler, OR

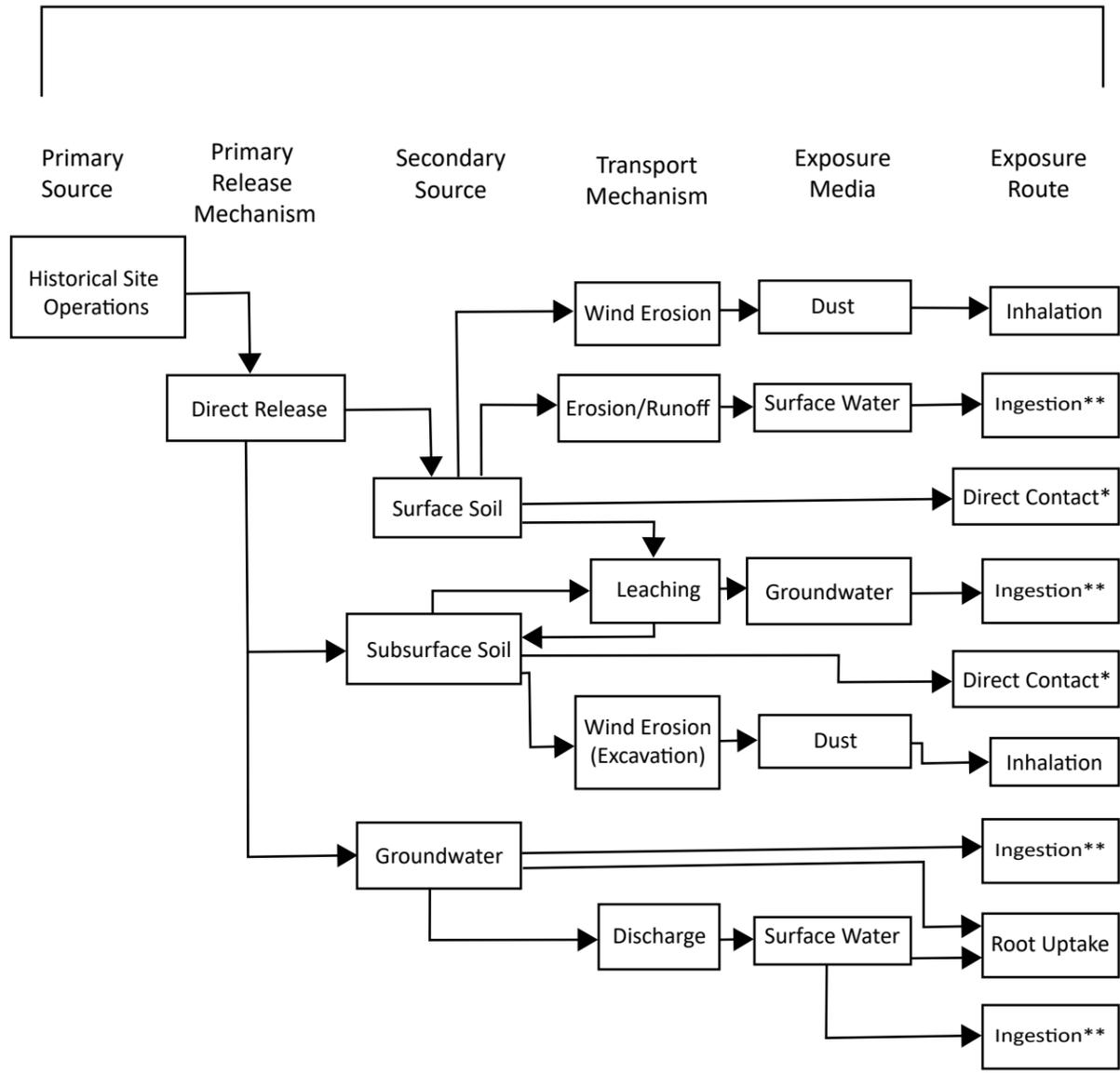
PROJECT NUMBER: 0053.009.004

Groundwater Sampling Results - PAHs

FIGURE 7

File: N:\GIS\Prj\0053.005 - Wheeler\MXDs\updated\Ph I\2025\01\02\Figure 7 - Groundwater Sampling Results - PAHs (notapwaterRBC).mxd 1/2/2025 Created by: ALV Coordinate System: NAD 1983 StatePlane Oregon North FIPS 3601 Feet

Pathways



Receptors

Residential		Occupational		Construction/Excavation Worker		Trespasser		Plants		Invertebrates		Birds		Mammals		Aquatic Life	
---	○	---	○	---	○	○	○	---	---	---	---	○	○	○	○	---	---
---	---	---	---	---	---	---	---	---	---	○	○	○	○	○	○	○	○
---	○	---	○	---	○	○	○	○	○	○	○	○	○	○	○	---	---
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---	---	---	---	---	---	---	---	---	---	○	○	○	○	○	○	○	○
Current	Future	Current	Future	Current	Future	Current	Future	Current	Future	Current	Future	Current	Future	Current	Future	Current	Future

Note:
 * "Direct Contact" includes incidental ingestion, dermal contact, and inhalation from soil.
 ** "Ingestion" includes dermal contact and inhalation from tap water or surface water.
 ○ Potentially complete pathway
 --- Incomplete pathway

	CLIENT: Tillamook County	Conceptual Site Model
	PROJECT: Highway 101 Former Mill Site Highway 101, Wheeler, Oregon	
	PROJECT NUMBER: 0053.009.004	FIGURE 8

Appendix A

ODEQ Voluntary Cleanup Program Agreement Letter





Oregon

Tina Kotek, Governor

Department of Environmental Quality

Northwest Region

700 NE Multnomah Street, Suite 600

Portland, OR 97232

(503) 229-5263

FAX (503) 229-6945

TTY 711

January 9, 2024

Chris Chiola
Tillamook County
1510-B Third Street
Tillamook, OR 97141

RE: Voluntary Cleanup Agreement
for Former Wheeler Lumber Mill
ECSI #6581

Dear Chris Chiola:

This letter responds to your request to investigate and/or clean up contaminated property under the review and oversight of the Department of Environmental Quality's Voluntary Cleanup Program. This letter also serves as a Letter Agreement between you and DEQ, regarding DEQ review and oversight of the investigation and/or cleanup of hazardous substances at the former Wheeler Lumber Mill property located at Highway 101 at Marine Drive, Wheeler, Oregon (Township 2N, Range 10W, Section 2; Tax Lots 300, 301, 400, 4700 and 4800). Tillamook County is using EPA Brownfield grant funds to conduct a Phase I and Phase II Environmental Site Assessment for the former mill site.

DEQ agrees to review environmental documents submitted by you or on your behalf regarding the investigation and/or cleanup of the above-referenced site, and to review related information available in DEQ's files, and conduct a site visit if necessary. DEQ will then recommend a course of action to complete the project. The course of action may include, but not be limited to, additional investigation, risk assessment, remedial action evaluation and selection, and/or a "no further action" determination consistent with the Environmental Cleanup Law. DEQ will provide public notice and opportunity for comment on any remedial action proposal or "no further action" determination in accordance with ORS 465.320. DEQ will also determine, in consultation with you, the form of any further agreement needed to manage the project most effectively.

DEQ requires that persons seeking DEQ review and oversight of investigation and cleanup activities provide a minimum deposit as an advance against costs which DEQ will incur. DEQ is waiving the deposit for this Letter Agreement. When you have signed this letter to formalize your request, a sub-account of the Hazardous Substances Remedial Action Fund will be established to be drawn upon by DEQ as project costs are incurred.

DEQ will provide you with a monthly invoice. DEQ project costs will include direct costs and indirect costs. Direct costs include site-specific expenses and legal costs. Indirect costs are those general management and support costs of the State of Oregon and DEQ allocable to DEQ oversight of this Letter Agreement and not charged as direct site-specific costs. Indirect charges are based on actual costs and are applied as a percentage of direct personal services costs. Review and oversight costs will not include any unreasonable costs or costs not otherwise recoverable by DEQ under ORS 465.255.

Either you or DEQ may terminate this Letter Agreement by giving 15 days advance written notice to the other. Only those costs incurred or obligated by DEQ prior to the effective date of any termination of this Letter Agreement shall be recoverable under this Agreement. Termination of this Letter Agreement will not affect any other right DEQ may have for recovery of costs under applicable law.

You shall hold DEQ harmless for any claims (including but not limited to claims of property damage or personal injury) arising from activities performed by you and reviewed or overseen by DEQ under this Letter Agreement.

This Letter Agreement is not and shall not be construed as an admission by you of any liability under ORS 465.255 or any other law or as a waiver of any defense to such liability. This Letter Agreement is not and shall not be construed as a waiver, release, or settlement of claims DEQ may have against you or any other person or as a waiver of any enforcement authority DEQ may have with respect to you or the property. Upon DEQ's request and as necessary to oversight of your work under this Letter Agreement, you shall provide DEQ with data and records related to investigation and cleanup activities at the property, excluding any privileged documents identified as such by you.

DEQ appreciates your interest in the Voluntary Cleanup Program and looks forward to working with you.

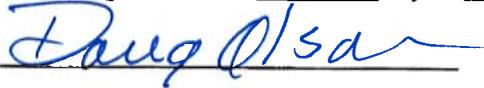
Sincerely,



Paul Seidel, Manager
Northwest Region Cleanup

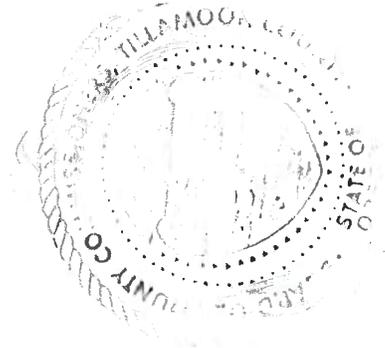
If the terms of this Agreement are acceptable to you, please have it executed by an authorized representative in the space provided below. Please return a signed agreement (all three pages) by mail.

Accepted and agreed to this 14th day of February, 2024.

By: 

Title: Vice-Chair, Board of Commissioners

Enclosures: **Sample Invoice**
Sample Direct Labor Summary



State of Oregon
Department of Environmental Quality

INVOICE

Site Name: ABC, Inc
Project No: 10000000
Authorization:

Invoice Number: HSRAF01-XXXX
Invoice Date: 8/30/2001

John Q. Public Corporation
Attn: John
123 S.W. Bedrock Avenue
Portland, OR 97200

Payment Due: 9/29/2001

Project Expenditures:	Billing Period 7/01
Personal Services	\$ 0.00
Attorney General	0.00
Travel	0.00
Services and Supplies	0.00
Contract Payments	0.00
Total Current Charges:	\$ <u>0.00</u>

Previous Balance	Billing Period Expenditures	Interest	Total Balance Due
0.00	0.00	0.00	0.00

----- Cut here and return this portion with payment -----

Remit and make checks payable to:

Check box if your address has changed and complete back of invoice:

Dept. of Environmental Quality
Attn.: Business Office
811 SW Sixth Avenue
Portland, OR 97204-1390

Site Name: ABC, Inc
Project No: 10000000

Invoice Number: HSRAF01-XXXX
Amount Enclosed:

Current	31-60 Days	61-90 Days	90+ Days	Total Due
0.00	0.00	0.00	0.00	0.00

DIRECT LABOR SUMMARY
BUSINESS #100000
ABC, INC.
FOR THE MONTH OF JULY 2001

DATE	STAFF NAME	ACTIVITY NAME	ACTIVITY HOURS
3/7/01	TOBY SCOTT	Document Review: rev constr., remed. eval.	<u>2.0</u>
		DAILY TOTAL	2.0
3/12/01	TOBY SCOTT	Document Review: review sampling data	<u>1.0</u>
		DAILY TOTAL	1.0
3/14/01	TOBY SCOTT	Coordination: prep for field sampling	1.0
	TOBY SCOTT	Site Visit: Sample killian well	<u>2.0</u>
		DAILY TOTAL	3.0
3/15/01	TOBY SCOTT	Document Review: air emission response	1.0
	TOBY SCOTT	Records Management: sample prep and ship	1.0
		DAILY TOTAL	2.0
3/16/01	TOBY SCOTT	Meetings: mtg. @ ch2mhill	4.0
	TOBY SCOTT	Travel: rdm>pdx	2.0
	MIKE POULSEN	Document Review: Air Modeling	<u>1.0</u>
		DAILY TOTAL	7.0
3/19/01	TOBY SCOTT	Document Review: system startup rpt., constr.	2.0
	MIKE POULSEN	rpt.	<u>4.0</u>
		Air modeling	6.0
		DAILY TOTAL	6.0
3/22/01	TOBY SCOTT	Communication: M Germon, M Poulson	1.0
	TOBY SCOTT	Document Prep. Air Emissions	1.0
	TOBY SCOTT	Document Review: well data, pilot testing, air emission data	<u>2.0</u>
		DAILY TOTAL	4.0
3/26/01	TOBY SCOTT	Document Review: rev. remed. pilot study workplan	<u>2.0</u>
		DAILY TOTAL	2.0
3/27/01	TOBY SCOTT	Document Prep: Killian data	2.0
	TOBY SCOTT	Document Review: Killian rpt.	<u>2.0</u>
		DAILY TOTAL	4.0
LAB	DEANNA EVANS	DAILY TOTAL	.5
	PAUL SCHOENLAUB	DAILY TOTAL	2.0
		TOTAL HOURS	33.5



Oregon

Tina Kotek, Governor

Department of Environmental Quality

Northwest Region

700 NE Multnomah Street, Suite 600

Portland, OR 97232

(503) 229-5263

FAX (503) 229-6945

TTY 711

January 9, 2024

Chris Chiola
Tillamook County
1510-B Third Street
Tillamook, OR 97141

RE: Voluntary Cleanup Agreement
for Former Wheeler Lumber Mill
ECSI #6581

Dear Chris Chiola:

Enclosed is a copy of the Voluntary Cleanup Letter Agreement to cover the Department of Environmental Quality's review of investigation and/or cleanup activities performed for the Former Wheeler Lumber Mill site located at Highway 101 at Marine Drive, Wheeler, Oregon (Township 2N, Range 10W, Section 2; Tax Lots 300, 301, 400, 4700 and 4800) and any additional investigation and cleanup activities that may need to be performed.

Please sign the Letter Agreement and return to me. If circumstances have changed and you no longer intend to enroll in the program, a courtesy call is appreciated so that staff may be promptly reassigned to the next priority site.

Please contact Kara Master, NWR Cleanup Program Representative, at 503-229-5585 or kara.e.master@deq.oregon.gov if you have any questions about the agreement. We look forward to working with you.

Sincerely,

Paul Seidel, Manager
Northwest Region Cleanup

Enclosure: Voluntary Cleanup Letter Agreement

Appendix B

Geophysical Survey





°PACIFIC°
GEOPHYSICS

SURVEY REPORT

PROJECT #: 231103

SURVEY SITE

Former Wheeler Mill Site
Tillamook Oregon

DATES

May 15-16, 2024



PREPARED FOR

Terraphase, Inc.

Contents

Introduction	1
Site Description and Scope of Work	1
Geophysical Equipment and Survey Procedures	2
Results	3
Conclusions	4
Limitations	5

List of Figures:

Figure 1.	Survey Location and Areas-Wheeler
Figure 2.	Wheeler; Magnetic Contour Map-Area 1
Figure 3.	Wheeler; Magnetic Contour Map-Area 2
Figure 4.	Wheeler; Magnetic Contour Map-Area 3

List of Appendices:

Appendix A. Geophysical Survey Methods
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Introduction

This report describes geophysical survey conducted in Wheeler, OR. The survey was conducted for Terraphase.

A magnetometer was used across three locations at a former lumber-mill site to locate possible underground storage tanks (USTs) in the vicinity of razed buildings. An additional scope was to clear several proposed borehole locations of buried obstructions and piping across the site (Figure 1).

GPR, a hand-held metal detector, and a power locator were used to clear borehole locations.

This report includes the site description, scope of work, methodology, and results of the geophysical survey.

Site Description and Scope of Work

The survey was conducted across the areas shown in Figure 1, at Highway 101, west of the intersection at Hemlock Street. Three buildings were razed from these areas. The scope was to use a magnetometer to detect possible USTs in the 15-20-foot perimeter of each former building, where accessible. The locations of the buildings were marked on the ground surface by Terraphase personnel. Ten borehole locations were cleared.

Nikos Tzetos of Pacific Geophysics conducted the survey for Messrs. James Farrow and Don Malkemus of Terraphase on May 15-16, 2024. This report was written by Nikos Tzetos and emailed to Messrs. Farrow and Malkemus on June 9, 2024.



Geophysical Equipment and Survey Procedures

General Procedures:

A magnetometer is the first instrument used to investigate a site for subsurface ferrous metallic objects because it enables the operator to rapidly scan the subsurface. Data are collected across an accurately measured survey grid established on the site, or with GPS coupled to the instrument.

Upon completing the data-acquisition phase of the survey, a contour map of the earth's local magnetic field is produced. Small, handheld metal detectors are then used to investigate the magnetic anomalies detected with the magnetometer more thoroughly. These instruments are excellent at detecting and characterizing buried metal objects; however, they do not record data, and are not adequate to survey large areas.

GPR is usually the last method used to investigate a site for buried objects. The shape of radar reflections produced by buried objects may assist in the interpretation of magnetic anomalies. GPR is the only instrument capable of detecting disturbed-soil zones caused by excavations or UST pits.

Magnetic Survey:

A Geometrics G864 Land Cesium Magnetometer was used to acquire magnetic data. A colored contour map showing the earth's local magnetic field was created and printed in the field for each area, contoured at an interval of 250 nT (nanoTesla). The maps show the earth's local magnetic field at the time of the survey. Grids were established across the sites with a measuring wheel and tapes. GPS was used in two areas. Survey lines were 5 feet apart.

Magnetic anomalies higher in amplitude than the normal local magnetic background are shown in red and are usually found over areas where ferrous objects are located below the sensor, carried at a height of about 3 feet. These objects may be surface objects such as utility access covers, catch basins, hydrants, or other surface features, or buried objects of interest, such as USTs, drums, pipes, and debris. Magnetic anomalies at or below the amplitude of the local magnetic field are shown in blue and are caused by ferrous objects located above the sensor, such as buildings, poles, chain-link fences, and other surface objects. Depending on their size and orientation, large, buried objects may produce both positive (red) and negative (blue) anomalies.

Surface objects can produce significant magnetic interference that can conceal buried objects of interest. The metallic objects that produced significant interference at this site are noted above. Buried metallic objects of interest located near or under these objects may have been missed because of the magnetic noise produced by the surface objects.

Hand-held instruments:

An Aqua-Tronics A6 Tracer and a Schonstedt GA92XTd magnetic gradiometer were used to locate and investigate the anomalies detected by the magnetometer. These instruments can pinpoint the peaks and troughs of the anomalies and, in many cases, determine if an object is linear (pipe or utility) or three-dimensional (UST).

The transmitter unit of a Radio Detection RD7200 pipe and cable detector may be used to electrically charge an accessible metal pipe or utility. The charged object can then be "traced" using the receiver unit. The receiver can also detect some metallic features indirectly, using the system's "radio" function.

Ground Penetrating Radar:

Following the hand-held instrument survey, a GSSI SIR-4000 GPR system coupled to one of many antennas was used to investigate suspicious magnetic anomalies. Radar data collected across the anomalies may give clues to the size and shape of the buried metallic objects producing them. If an object of interest, such as a UST, is buried below the depth of penetration of the radar signal, it will be missed.



In order to detect features like UST excavations or non-conductive pipes, GPR traverses are made on a grid across the area of interest.

The collection of radar data is very time consuming; therefore, GPR is not a cost-effective method to “blindly” scan a site for buried metallic objects; however, radar is one of the only methods capable of detecting non-metallic features, including PVC and clay pipes, septic tanks, drywells, and trenches and excavations.

Additional information regarding these instruments, methods, surveys, and limitations with references can be found in the appendix.

Results

Figures 2, 3, and 4 are magnetic contour maps created with the data collected during this survey.

Area 1 (Figure 2): The survey could not extend 20 feet to the west of the office building footprint due to dense vegetation. No suspicious magnetic anomalies were detected with the survey across this area.

Area 2 (Figure 3): The survey could not extend 20 feet to the east and south of the office building footprint due to dense vegetation. No suspicious magnetic anomalies were detected here. While investigating the magnetic low anomaly marked A, a magnetic high anomaly caused by a small object was detected 7 feet south of the survey area. No three-dimensional object was detected at this location with the Tracer.

Area 3 (Figure 4): The survey extended into the 20-25-foot perimeter of the large building now razed from this location. Access was limited by thick vegetation. The survey extended as far as the train tracks to the east. The following anomalies were detected and are marked in Figure 6:

No 3D object was detected at the location of anomaly B with the Tracer. While investigating this anomaly, a 3D object was detected to the south, beyond the extent of the magnetic survey. No recognizable radar reflectors were seen in profiles across the object. It may be metallic construction debris or other type of debris.

Anomaly C is caused by a cut-off sign base covered with a metal plate.

Anomalies marked D are interpreted to be caused by the train tracks.

No USTs were detected in the accessible portions of the survey area.

Ten proposed borehole locations were cleared after the conclusion of the magnetic survey. GPR could not be used at boreholes 2, 3, 4, and 5 because of dense vegetation and tall, hummocky grass.



Conclusions

Three areas at the former location of a lumber mill were surveyed with a magnetometer to detect USTs. Ten proposed boreholes were cleared.



Limitations

The conclusions presented in this report were based upon widely accepted geophysical principles, methods, and equipment. This survey was conducted with limited knowledge of the site, the site history, and the subsurface conditions.

The goal of near-surface geophysics is to provide a rapid means of characterizing the subsurface using non-intrusive methods. Conclusions based upon these methods are generally reliable; however, due to the inherent ambiguity of the methods, no single interpretation of the data can be made. As an example, rocks and roots produce radar reflections that may appear the same as pipes and tanks.

Under reasonable site conditions, geophysical surveys are good at detecting changes in the subsurface caused by manufactured objects or changes in subsurface conditions, but they are poor at identifying those objects or subsurface conditions.

Objects of interest are not always detectable due to surface and subsurface conditions. The deeper an object is buried, the more difficult it is to detect, and the less accurately it can be located.

The only way to see an object is to physically expose it.

Nikos Tzetos
Pacific Geophysics

June 9, 2024



Appendix A. Geophysical Survey Methods

Magnetometer Surveys

Small disturbances in the Earth's local magnetic field are called "magnetic anomalies." These may be caused by naturally occurring features such as metallic mineral ore bodies, or from manufactured features such as metal buildings, vehicles, fences, and underground storage tanks. The magnetometer only detects changes produced by *ferrous* objects. Aluminum and brass are non-ferrous metals and cannot be detected using a magnetometer.

A magnetometer is an electronic instrument designed to detect small changes in the Earth's local magnetic field. Over the years different technologies have been used in magnetometers. The Geometrics G-864 Land Cesium Magnetometer used to collect magnetic data for Pacific Geophysics uses one of the most recent methods to detect magnetic anomalies. A detailed discussion describing the method this unit uses is available at Geometrics.com.

This magnetometer enables the operator to collect data rapidly and continuously rather than the older instruments that collected data at discreet points only. The G-864 is carried by hand across the site. The sensor is carried at waist level. Typically, individual data points collected at normal walking speed are about 6" apart along survey lines usually 5 feet apart, depending on the dimensions of the target objects.

It is critical to know the exact location of each data point so that if an anomaly is detected it can be accurately plotted on a magnetic contour map. At most small sites, data are collected along straight, parallel survey lines set up on the site before the data collection stage begins. For very large, complex sites, the G-864 can be connected to a Global Positioning System (GPS) antenna which allows the operator to collect accurately located data without establishing a survey grid. With GPS, data are collected and positioned wherever the operator walks. A limitation using GPS is that the GPS antenna must have line of sight with the GPS satellites. Data can be inaccurately located if the GPS antenna is under trees or near tall buildings.

Data are stored in the unit's memory for later downloading and processing. A magnetic contour map of the data is plotted in the field. Geographical features are plotted on the map. Magnetic anomalies appearing to be caused by objects of interest are then investigated on the site using several small hand-held metal detectors. If an object appears to be a possible object of interest, it may be investigated with GPR.

Magnetic contour maps may be printed in color in order to highlight anomalies caused by ferrous objects located under the magnetic sensor. Usually, ferrous objects situated below the sensor produce magnetic "highs" and anomalies located above the sensor produce magnetic "lows." Magnetic highs are of interest to the operator since most objects of interest are located underground.

Depending on the orientation, shape and mass of a metallic object, a high/low pair of magnetic anomalies may be present. In the northern hemisphere the magnetic low is located north of the object and the magnetic high toward the south. The object producing the anomaly is located part way between the high and the low anomalies.

Magnetometer surveys have limitations. Magnetometers only detect objects made of ferrous (iron-containing) metal. Large ferrous objects (buildings, cars, fences, etc.) within several feet of the magnetometer create interference that may hide the anomaly produced by a nearby object of interest.

Ground Penetrating Radar

A Geophysical Survey Systems, Inc. (GSSI) SIR-4000 GPR system coupled to GSSI antennas of various central frequencies is used to obtain the radar data for our surveys.

The radar antenna used for the surveys is designed to transmit and receive electromagnetic energy. EM energy is transmitted into the material the antenna passes over. A portion of that energy is reflected back to the antenna and amplified. Reflections are displayed in real-time in a continuous cross section. Reflections are produced where there is a sufficient electrical contrast between two materials. Changes in the electrical properties (namely the dielectric constant) that produce radar reflections include the moisture content, porosity,



mineralogy, and texture of the material. Metallic objects of interest exhibit a strong electrical contrast with the surrounding material and thus produce relatively strong reflections. Non-metallic objects of interest (septic tanks, cesspools, dry wells, PVC, and clay tile pipes) are not always good reflectors.

Radar data are ambiguous. It can be difficult to distinguish the reflection produced by an object of interest from the reflection caused by some natural feature. Rocks or tree roots have reflections that appear similar to reflections from pipes. In concrete investigations reflections produced by metal rebar look exactly like those from electrical conduit or post-tension cables. Objects with too small an electrical contrast may produce no reflections at all and may be missed. Target objects buried below objects with contrasting properties that also produce reflections may be missed (e.g., USTs below roots, concrete pieces, pipes, or rocks). If an object of interest like a UST is buried below the depth of penetration of the radar signal, it will be missed.

In addition to interpreting ambiguous data, radar has several limitations that cannot be controlled by the operator. The radar signal is severely attenuated by electrically conductive material, including wet, clay-rich soil and reinforced concrete. The quality of the data is affected by the surface conditions over which the antenna is pulled. Ideally the antenna should rest firmly on a smooth surface. Rough terrain and tall grass reduce the quality of radar data.

It is the job of an experienced interpreter to examine the GPR profiles and deduce if reflections are from objects of interest. A GPR interpreter cannot see underground but can only interpret reflections based on experience.

The only way to truly identify an object is to excavate.

Handheld Metal detectors

Two small, non-recording metal detectors are used to locate suspect magnetic anomalies detected using the G-864 Magnetometer in order to determine the likely cause of the anomaly. First, the magnetic contour map and a Schonstedt Magnetic Gradiometer are used to locate the center of the magnetic anomalies.

Once the anomaly is located an Aqua-Tronics Tracer is used to determine if the object producing the anomaly is a possible object of interest. Most anomalies are at least in part produced by features observed on the ground surface.

Schonstedt Magnetic Gradiometer: This magnetometer has two magnetic sensors separated vertically by 10". The magnetic field surrounding a ferrous object is strongest near the object and decreases rapidly as the distance increases. If the magnitude measured by the sensor located in the tip of the Schonstedt is very high, and the magnetic field measured by the sensor located farther up the shaft of the Schonstedt is low, there is a large vertical magnetic gradient, and the instrument responds with a loud whistle indicating the object is near the surface. If there is a small difference in the magnitudes measured by the two sensors, the object is deeper. The instrument responds with a softer tone. A discussion of this instrument is available at Schonstedt.com.

Aqua-Tronics A-6 Tracer: The Aqua-Tronics A-6 Tracer uses a different method of detecting metallic objects. This instrument measures the electrical conductivity of a metal object. It is capable of detecting any electrically conductive metal, including non-ferrous aluminum and brass. The Tracer is capable of detecting three-dimensional objects as well as pipes.

The Tracer consists of a transmitter coil and a receiver coil. In the absence of any electrically conductive material in the vicinity of the Tracer, the electromagnetic field around each coil is balanced.

Basically, the electromagnetic field produced by the transmitter induces an electric current into the area surrounding the instrument. Nearby conductive objects distort the EM field. The balance between the two coils is disturbed and the instrument produces an audible tone and meter indication.

Radio Detection RD8000 PDL: This instrument may be used to detect buried, conductive pipes and utilities. It consists of a transmitter and a receiver and can be used in two configurations.



The transmitter may be used to directly apply a small electrical current to exposed, electrically conductive pipes and utilities. The RD receiver is then able to “trace” the underground portion of the pipe or utility, under some conditions for several hundred feet. The transmitter can also induce an electrical current into buried pipes and utilities where direct contact is not available.

The receiver can also be used alone. It has the capability to locate pipes and utilities by detecting the very small electrical currents induced into the features by nearby AM/FM radio stations.

The receiver also has an AC power function that may be used to detect underground power lines.



FIGURE

1

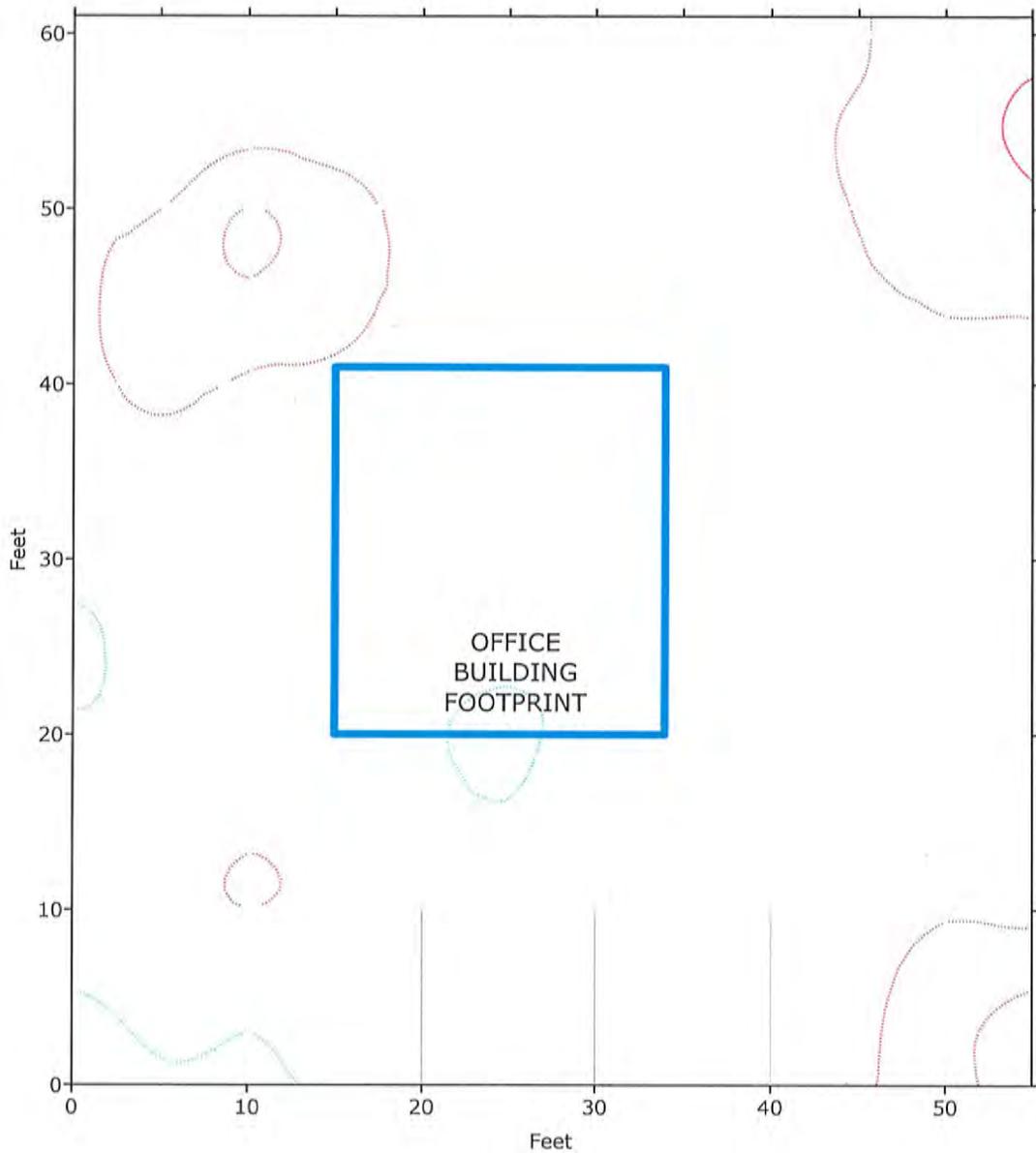
Survey Location and Areas-Wheeler

Project:
231103

UST Survey
Highway 101,
Wheeler, Oregon

Drawn by : NT

Prepared for: Terraphase
Base Photo from Google Earth



Contour Interval: 250 nT



FIGURE

2

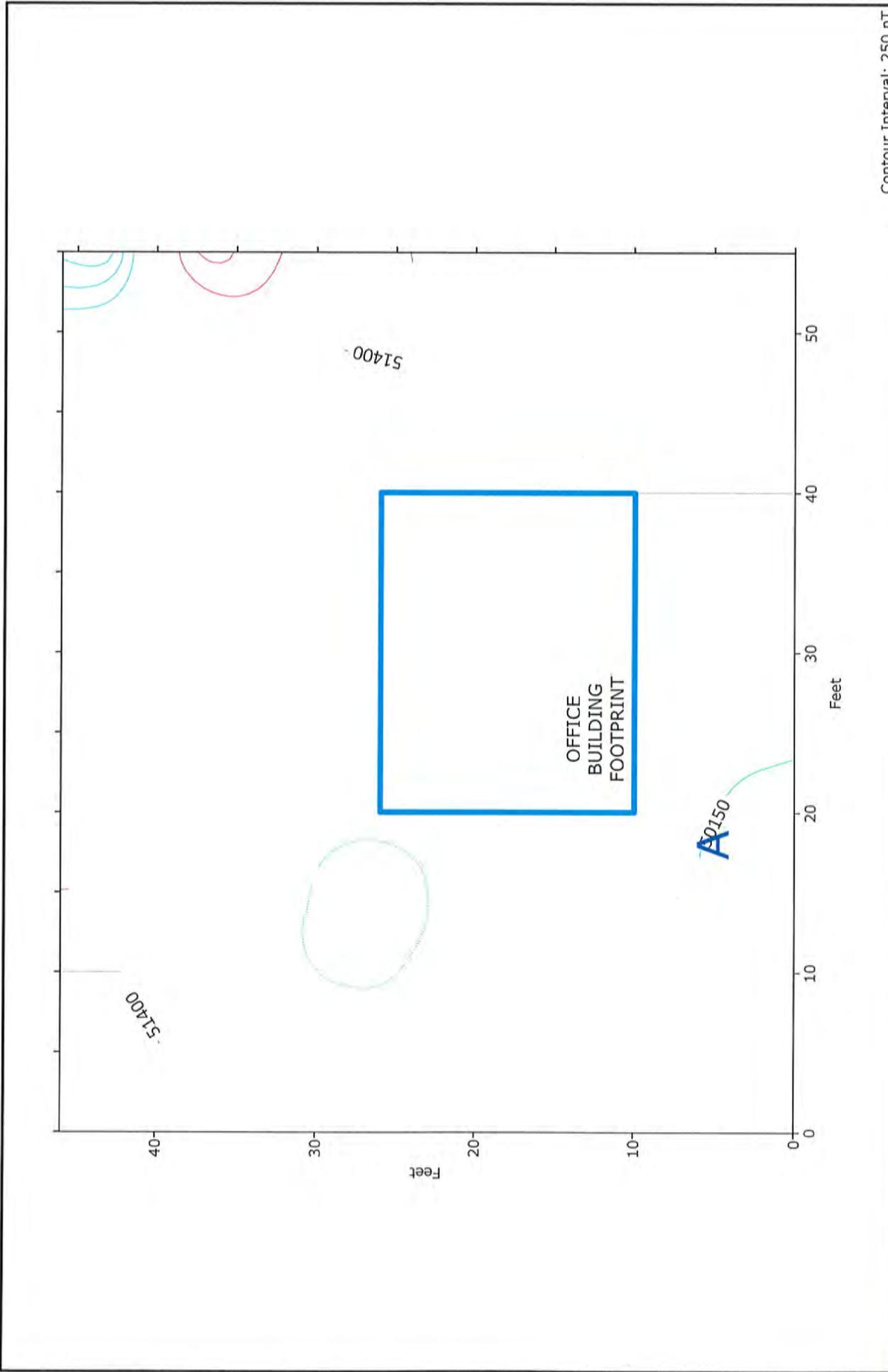
Magnetic Contour Map-Area1

Project:
231103

UST Survey
Highway 101,
Wheeler, Oregon

Drawn by : NT

Prepared for: Terraphase
Survey Dates: May 15-16, 2024



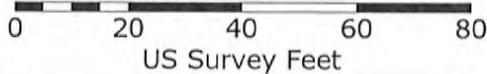
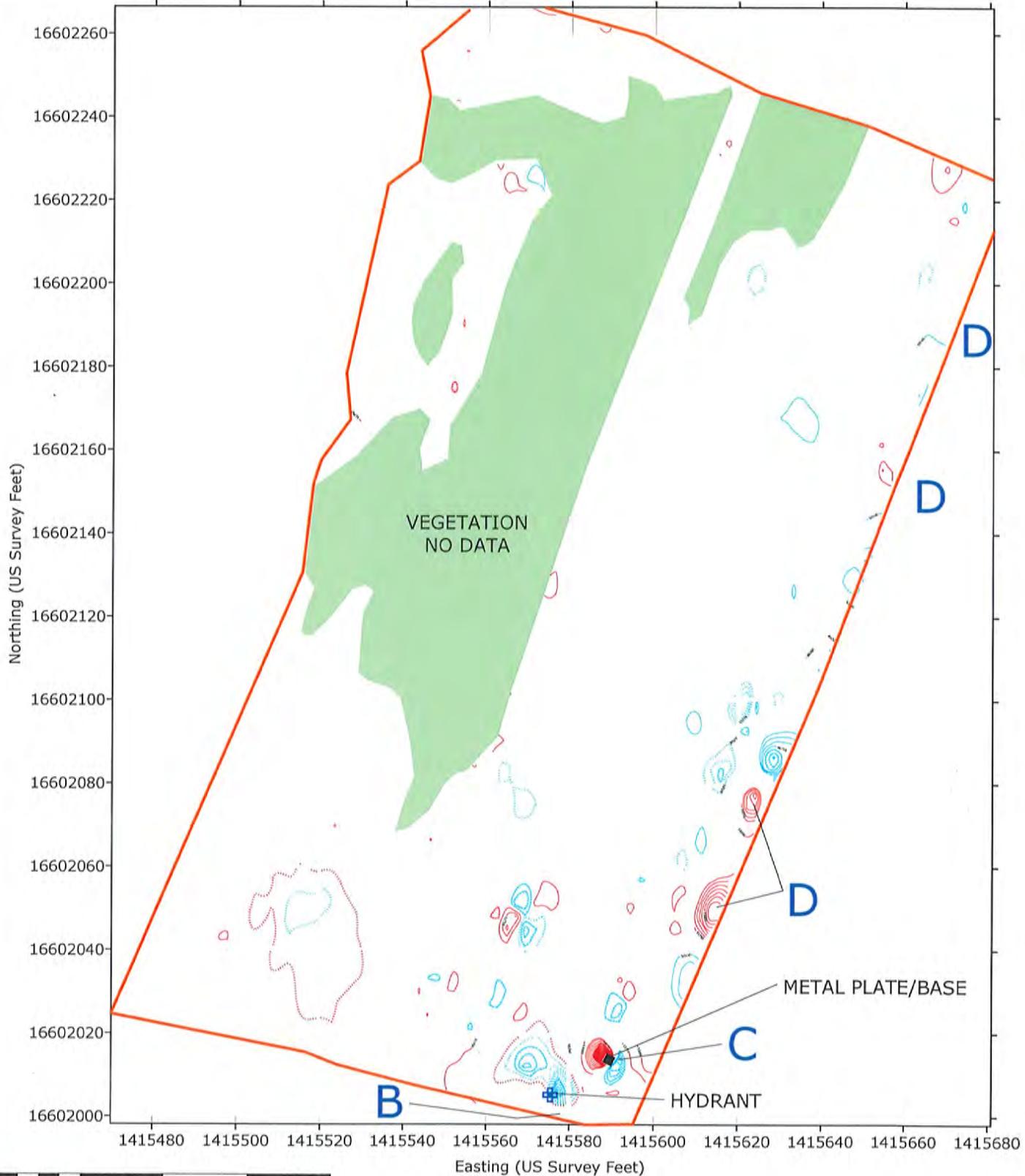
Contour Interval: 250 nT

FIGURE 3	Magnetic Contour Map-Area 2	
	Project: 231103	UST Survey Highway 101, Wheeler, Oregon
Drawn by : NT		Prepared for: Terraphase
		Survey Dates: May 15-16, 2024



PACIFIC
GEOPHYSICS





Projection: UTM, Datum: WGS84; Contour Interval: 250 nT



PACIFIC GEOPHYSICS



FIGURE
4

Magnetic Contour Map-Area 3

Project: 231103	UST Survey Highway 101, Wheeler, Oregon
Drawn by : NT	Prepared for: Terraphase
	Survey Dates: May 15-16, 2024

Appendix C

Boring Logs





Project Number: 0053.009.004
Project Name: Hwy 101 Former Mill Site
Client: Tillamook County
Address: Wheeler, Oregon
Drilling Date: 05/22/2024

Drilling Company: Holocene
Driller: Tyler Sagon
Drill Rig: Geoprobe 6011DT
Drilling Method: Direct Push
Total Depth: 15'
Borehole Diameter: 2.25"

Coordinates: 45.693059, -123.880708
Coords Sys: Lat/Lon
Surface Elevation: 14.9'
Logged By: Don Malkemeus
Checked By: James Farrow

Comments -

Depth (Ft)	PID (ppm)	Recovery Length (In)	Sample ID	Water Levels	Graphic Log	USCS	Visual Classification and Remarks
2.4		36	WS-SB-1-0.0-3.0			GM	Silty GRAVEL with Sand (GM) - medium dense, yellowish brown (10YR 5/4), dry to damp, angular, up to 2 inches in diameter, with silt (25%) and sand (25%)
1.3							
1.9							
5		36	WS-SB-1-5.0-8.0	5-22-24 		SP	Poorly Graded SAND (SP) - medium dense, greenish black (10G 2.5/1), wet, medium-grained, with fines (10%) and gravel (10%)
2.3							
2.7							
3.9							
10		12				MH	Elastic SILT with Sand (MH) - soft, very dark gray (10YR 3/1), wet, medium plasticity, with sand (15%), organic-rich
1.2							
0.4							
15							End of boring at 15'

6.0

10.5

15.0



Project Number: 0053.009.004
Project Name: Hwy 101 Former Mill Site
Client: Tillamook County
Address: Wheeler, Oregon
Drilling Date: 05/21/2024

Drilling Company: Holocene
Driller: Tyler Sagon
Drill Rig: Geoprobe 6011DT
Drilling Method: Direct Push
Total Depth: 20'
Borehole Diameter: 2.25"

Coordinates: 45.693059, -123.880708
Coords Sys: Lat/Lon
Surface Elevation: 14.9'
Logged By: Don Malkemeus
Checked By: James Farrow

Comments -

Depth (Ft)	PID (ppm)	Recovery Length (In)	Sample ID	Water Levels	Graphic Log	USCS	Visual Classification and Remarks
0		60	WS-SB-2-0.0-5.0			ML	SILT (ML) - medium stiff, yellowish brown (10YR 3/4), dry, low plasticity, some sand (10%) and gravel (10%), abundant roots in upper 4 inches bgs.
4.0							
5		24	WS-SB-2-5.0-7.0			GM	Silty GRAVEL with Sand (GM) - dense, yellowish brown (10YR 3/4), moist, up to 3 inches in diameter, with silt (20%) and sand (10%) Very dark bluish gray (5B 3/1) below 5 feet bgs.
7							No recovery from 7 to 10 feet bgs
10		60				CH	FAT CLAY (CH) - soft, dark gray (7.5 2/1), moist to wet, high plasticity, trace sand (5%), organic-rich
11.5							
15							No recovery from 15 to 20 feet bgs (expendable point).
20							

5-21-24

End of boring at 20'



Project Number: 0053.009.004
Project Name: Hwy 101 Former Mill Site
Client: Tillamook County
Address: Wheeler, Oregon
Drilling Date: 05/22/2024

Drilling Company: Holocene
Driller: Tyler Sagon
Drill Rig: Geoprobe 6011DT
Drilling Method: Direct Push
Total Depth: 20'
Borehole Diameter: 2.25"

Coordinates: 45.693059, -123.880708
Coords Sys: Lat/Lon
Surface Elevation: 14.9'
Logged By: Don Malkemeus
Checked By: James Farrow

Comments -

Depth (Ft)	PID (ppm)	Recovery Length (In)	Sample ID	Water Levels	Graphic Log	USCS	Visual Classification and Remarks
0		60	WS-SB-3-0.0-5.0			ML	SILT with Sand and Gravel (ML) - medium stiff, pale brown (10YR 6/3), dry, low plasticity, with sand (15%) and gravel up to 1.5 inches in diameter (10%)
3.0							
5		36	WS-SB-3-5.0-8.0	5-22-24		MH	Elastic SILT (MH) - soft, very dark gray (10YR 3/1), moist to wet, high plasticity, with fine-grained sand (10%) Intermittent wet layers 1 to 4 inches thick.
10		36					2-inch layer of wet, angular gravel at 11 feet bgs. Wood debris at 12.5 feet bgs.
15		60					Wood debris at 17 to 17.5 feet bgs
20							Wood debris at 19 to 20 feet bgs

End of boring at 20'



Project Number: 0053.009.004

Project Name: Hwy 101 Former Mill Site

Client: Tillamook County

Address: Wheeler, Oregon

Drilling Date: 05/21/2024

Drilling Company: Holocene

Driller: Tyler Sagon

Drill Rig: Geoprobe 6011DT

Drilling Method: Direct Push

Total Depth: 20'

Borehole Diameter: 2.25"

Coordinates: 45.693059, -123.880708

Coords Sys: Lat/Lon

Surface Elevation: 14.9'

Logged By: Don Malkemeus

Checked By: James Farrow

Comments -

Depth (Ft)	PID (ppm)	Recovery Length (In)	Sample ID	Water Levels	Graphic Log	USCS	Visual Classification and Remarks
0		60	WS-SB-4-0.0-5.0			ML	SILT (ML) - medium stiff, yellowish brown (10YR 5/4), dry, low plasticity, some sand (10%) and gravel (10%)
5		48	WS-SB-4-5.0-9.0				6.0
6						GM	Silty GRAVEL (GM) - medium dense, dark gray (10YR 4/1), moist, with silt (20%) and sand (20%) 6-inch wet sand layer at 8 feet bgs.
10		60					11.0
15						CH	FAT CLAY (CH) - stiff, dark gray (7.5Y 2/1), moist to wet, high plasticity, with organic-rich (wood debris) interbeds, trace sand (5%)
20				5-21-24			20.0

End of boring at 20'



Project Number: 0053.009.004
Project Name: Hwy 101 Former Mill Site
Client: Tillamook County
Address: Wheeler, Oregon
Drilling Date: 05/22/2024

Drilling Company: Holocene
Driller: Tyler Sagon
Drill Rig: Geoprobe 6011DT
Drilling Method: Direct Push
Total Depth: 20'
Borehole Diameter: 2.25"

Coordinates: 45.693059, -123.880708
Coords Sys: Lat/Lon
Surface Elevation: 14.9'
Logged By: Don Malkemeus
Checked By: James Farrow

Comments -

Depth (Ft)	PID (ppm)	Recovery Length (In)	Sample ID	Water Levels	Graphic Log	USCS	Visual Classification and Remarks	
0		60	WS-SB-5-0.0-5.0			ML	SILT with Gravel and Sand (ML) - medium stiff, brownish yellow (10YR 6/8), dry to damp, low plasticity, with angular gravel up to 1 inch in diameter (10%) and sand (10%)	
5		42	WS-SB-5-5.0-8.5			GM	Silty GRAVEL (GM) - medium dense, dark greenish gray (5BG 4/1), moist, up to 2 inches in diameter, with silt (20%) and sand (10%)	
10		48				MH	Elastic SILT with Sand (MH) - soft, dark gray (10YR 3/1), moist to wet, medium to high plasticity, with fine-grained sand (10%), some wood debris	
15		60						
19.9								
20.0								

End of boring at 20'



Project Number: 0053.009.004
Project Name: Hwy 101 Former Mill Site
Client: Tillamook County
Address: Wheeler, Oregon
Drilling Date: 05/21/2024

Drilling Company: Holocene
Driller: Tyler Sagon
Drill Rig: Geoprobe 6011DT
Drilling Method: Direct Push
Total Depth: 15'
Borehole Diameter: 2.25"

Coordinates: 45.693059, -123.880708
Coords Sys: Lat/Lon
Surface Elevation: ~14.9'
Logged By: Adrienne Venegas
Checked By: James Farrow

Comments -

Depth (Ft)	PID (ppm)	Recovery Length (In)	Sample ID	Water Levels	Graphic Log	USCS	Visual Classification and Remarks
0		43	WS-SB-6-0.0-5.0			GW	Sandy GRAVEL (GW) - medium dense, brown to orangish brown (2.5Y 4/2), damp, angular, up to 2 inches in diameter, fine- to coarse-grained sand (27%), trace fines (3%)
2.5							2.5
2.0							Blueish gray (GLE Y 3/10) at 1.5 feet bgs.
2.0							2.0
5		45	WS-SB-6-5.0-8.5	5-21-24		GC	Clayey GRAVEL (GC) - medium dense, gray-brown (5Y 2.5/1), moist, angular, up to 2 inches in diameter, low plasticity fines (20%), with fine to coarse-grained sand (20%), abundant wood debris
8.5							8.5
10		60				SM	Silty SAND (SM) - medium dense, dark gray (GLE Y1 3/N), wet, fine- to medium-grained, low plasticity fines (10%)
11.0							11.0
15						ML	SILT with Sand (ML) - stiff to medium stiff, brown to orangish brown (2.5Y 3/3), wet, low plasticity, with fine-grained sand (10%), abundant organics (peat)
15.0							15.0

End of Boring



Project Number: 0053.009.004
Project Name: Hwy 101 Former Mill Site
Client: Tillamook County
Address: Wheeler, Oregon
Drilling Date: 05/21/2024

Drilling Company: Holocene
Driller: Tyler Sagon
Drill Rig: Geoprobe 6011DT
Drilling Method: Direct Push
Total Depth: 15'
Borehole Diameter: 2.25"

Coordinates: 45.693059, -123.880708
Coords Sys: Lat/Lon
Surface Elevation: 14.9'
Logged By: Adrienne Venegas
Checked By: James Farrow

Comments -

Depth (Ft)	PID (ppm)	Recovery Length (In)	Sample ID	Water Levels	Graphic Log	USCS	Visual Classification and Remarks
0		40	WS-SB-8-0.0-3.5			GW	Sandy GRAVEL (GW) - medium dense, brown (7.5YR 4/2), damp, angular, up to 1 inch in diameter, fine- to coarse-grained sand (25%), low plasticity silt (5%)
5		33	WS-SB-8-5.0-7.5	▽		SM	Moist below 4.75 feet bgs 5.0 Silty SAND (SM) - medium dense, dark brown to orange (7.5Y 3/2), moist, fine- to coarse-grained sand (predominantly medium), low plasticity silt (15%)
10		60					Bluish gray to black (GLE Y2 2.5/SPB), wet, medium- to coarse-grained sand below 8.5 feet bgs 12.8
15						MH	Elastic SILT with Sand (MH) - Stiff, dark brown to black (5YR 2.5/1), moist, medium to high plasticity, with fine-grained sand (10%), abundant organics (peat) 15.0

End of Boring at 15'



Project Number: 0053.009.004
Project Name: Hwy 101 Former Mill Site
Client: Tillamook County
Address: Wheeler, Oregon
Drilling Date: 05/21/2024

Drilling Company: Holocene
Driller: Tyler Sagon
Drill Rig: Geoprobe 6011DT
Drilling Method: Direct Push
Total Depth: 15'
Borehole Diameter: 2.25"

Coordinates: 45.693059, -123.880708
Coords Sys: Lat/Lon
Surface Elevation: 14.9'
Logged By: Adrienne Venegas
Checked By: James Farrow

Comments -

Depth (Ft)	PID (ppm)	Recovery Length (In)	Sample ID	Water Levels	Graphic Log	USCS	Visual Classification and Remarks
0		44	WS-SB-9-0.0-3.5			GW	Sandy GRAVEL with Silt (GW) - medium dense, dark brown (10 YR 3/3), damp, angular, up to 0.5 inches in diameter, fine- to coarse-grained sand (15%), with low plasticity silt (5%) 1.5
0				SW		Well-graded SAND (SW) - loose, light gray to brown (10YR 5/2), fine- to medium-grained, trace low plasticity fines (4%) 2.0	
0			WS-SB-9-5.0-8.0			GW	Clayey GRAVEL (GW) - medium dense, brown with orange weathering (10YR 4/3), moist, angular, up to 1 inch in diameter, medium plasticity clay (30%), some fine- to coarse-grained sand (10%) Dark brown to gray to black (2.5Y 3/2), with interbedded organic-rich horizons 2 to 3 inches thick below 4 feet bgs.
5		52				Light brown (2.5Y 4/2) at 7 feet bgs. 8.0	
0						SW	Well-graded SAND with Clay (SW) - loose, gray (2.5Y 3/2), wet, fine- to coarse-grained, with low plasticity clay (10%) 12.0
10		60				MH	Elastic SILT with Sand (MH) - stiff, brown to dark brown (10YR 2/2), moist, medium to high plasticity, with fine-grained sand (5%), abundant organics (peat) 15.0

End of Boring at 15'



Project Number: 0053.009.004
Project Name: Hwy 101 Former Mill Site
Client: Tillamook County
Address: Wheeler, Oregon
Drilling Date: 05/22/2024

Drilling Company: Holocene
Driller: Tyler Sagon
Drill Rig: Geoprobe 6011DT
Drilling Method: Direct Push
Total Depth: 10'
Borehole Diameter: 2.25"

Coordinates: 45.693059, -123.880708
Coords Sys: Lat/Lon
Surface Elevation: 14.9'
Logged By: Don Malkemeus
Checked By: James Farrow

Comments -

Depth (Ft)	PID (ppm)	Recovery Length (In)	Sample ID	Water Levels	Graphic Log	USCS	Visual Classification and Remarks
0		36	WS-SB-10-0.0-3.0			ML	SILT with Sand and Gravel (ML) - medium stiff, dark yellowish brown (10YR 4/6), dry to damp, low plasticity, with sand (15%) and angular gravel up to 1.5 inches in diameter (15%) 2.0
0						GM	Silty GRAVEL (GM) - medium dense, brown (10YR 4/3), moist, up to 1.5 inches in diameter
5		60	WS-SB-10-5.0-10.0			GM	Dark brown (10YR 3/3) organic-rich layer at 6 feet bgs. 7.0
0				▽ 5-22-24		SP	Poorly Graded SAND (SP) - medium dense, greenish black (5GY 5/1), wet, medium-grained 8.5
0						MH	Elastic SILT (MH) - soft, very dark gray (10YR 3/1), wet, high plasticity, organic-rich 10.0

End of boring at 10'

Appendix D

Field Notes



By: Don Malkemus

Date	05/15/2024	Contractor	Pacific Geophysics
Staff On-Site	Adrienne Venegas, Don Malkemus	Crew	Nikos Tzetos
Staff From Time	09:00	From Time	09:00
Staff To Time		To Time	
Weather	Partly Cloudy	Tailgate Meeting?	YES
Equipment	GPR, magnetic equipment	Remarks	

Work Summary

Mark borings at 4 sites, GPR at Wheeler

Time	Notes
09:00	Onsite
09:04	Health and Safety and planning huddle
09:21	Begin marking borings and GPR areas
09:47	Pacific Geophysics trunk will not open.



Picture taken at: 09:51
 Caption: Office building 1 outline in Orange paint
 Latitude: 45.6932584712113
 Longitude: -123.880990453596



Picture taken at: 09:59
 Caption: Office building 2 outline in orange paint
 Latitude: 45.69219953391673
 Longitude: -123.8809318053577

10:10	Pacific Geophysics scans office building 1
12:00	Pacific Geophysics scans Office 2.
12:36	Finish marking borings. MOB to Bewley.

By: Adrienne Venegas

Date	05/21/2024	Contractor	Holocene
Staff On-Site	Adrienne Venegas, Don Malkemus	Crew	Casey and Tyler
Staff From Time	07:53	From Time	08:40
Staff To Time		To Time	
Weather	Cold Cloudy	Tailgate Meeting?	YES
Equipment		Remarks	

Work Summary

Time	Notes
07:54	Calibrating PID: Zero - 0.0 ppm Span - 100.2 ppm
08:35	TEI on site at Wheeler
08:40	Holocene and Dana on site. Tailgate meeting
09:34	Setting up at WS-SB-8.

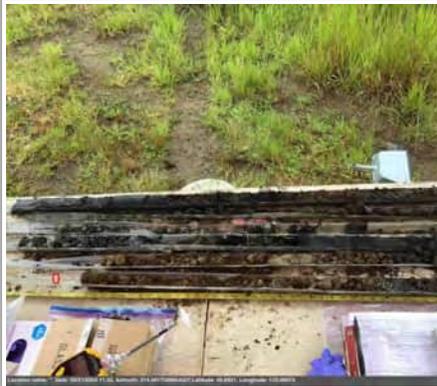
	<p>Picture taken at: 09:35 Caption: Set up at WS-SB-8 Latitude: 45.69306375924268 Longitude: -123.8806865725766</p>
	<p>Picture taken at: 10:05 Caption: WS-SB-8 soil Latitude: 45.69307833333333 Longitude: 123.880745</p>

Time Notes



Picture taken at: 12:30
Caption: WS-SB-8 gw sampling
Latitude: 45.69298889594073
Longitude: -123.8810417257583

10:48 Setting up at WS-SB-9.



Picture taken at: 11:33
Caption: WS-SB-9 soils
Latitude: 45.6931
Longitude: 123.88073



Picture taken at: 12:30
Caption: WS-SB-9 gw sampling
Latitude: 45.69297398660203
Longitude: -123.8806458882286

11:32 Drillers hand augering WS-SB-7 while gw samples collected



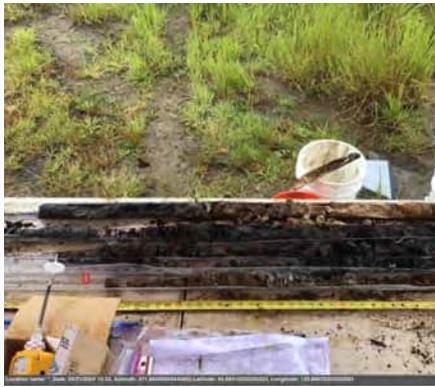
Picture taken at: 12:04
Caption: WS-SB-7 hand augered soils
Latitude: 45.69301282876284
Longitude: -123.8802590414082

Time Notes

12:27 Redrilling WS-SB-7 at new location due to large boulders knocking stem off center.



Picture taken at: 12:31
Caption: WS-SB-7
Latitude: 45.69301450814668
Longitude: -123.8805657354782



Picture taken at: 13:23
Caption: WS-SB-7 soils
Latitude: 45.69310333333333
Longitude: 123.88078333333333

13:32 Drilling WS-SB-6



Picture taken at: 13:32
Caption: WS-SB-6
Latitude: 45.69312673511786
Longitude: -123.8806672643015



Picture taken at: 14:56
Caption: WS-SB-6 soils
Latitude: 45.69308
Longitude: 123.880745

Time	Notes
15:15	Off site to UPS to ship samples to APEX labs. Don to remain on site to continue sampling.
18:15	Samples delivered to UPS.

By: Don Malkemus

Date	05/21/2024	Contractor	Holocene Drilling
Staff On-Site	Don Malkemus, Adrienne Venegas	Crew	Casey Newman, Tyler Sagon
Staff From Time	07:30	From Time	08:30
Staff To Time	18:30	To Time	18:30
Weather	Rain Cloudy	Tailgate Meeting?	YES
Equipment	Drill rig (6011 DT)	Remarks	

Work Summary

Drilling, soil and water sampling

Time	Notes
07:30	Start preparing
07:42	Calibrate PID, horriba meters
08:15	Mob to site, buy ice
08:30	Onsite, HEG and Holocene onsite too, health and safety tailgate
08:50	Unload setup
09:30	Begin drilling WS-SB-8
	<div style="display: flex; align-items: center; justify-content: center;">  <div style="margin-left: 20px;"> <p>Picture taken at: 09:44</p> <p>Caption: WS-SB-8</p> <p>Latitude: 45.6930400791315</p> <p>Longitude: -123.880758819884</p> </div> </div>
10:30	Begin drilling WS-SB-9, begin low flow sampling WS-SB-8
11:26	Holocene begins hang augering WS-SB-7, hard road base at surface so uses rotohammer
12:19	Start drilling WS-SB-7

Time Notes



Picture taken at: 12:20
Caption: WS-SB-7
Latitude: 45.69307728717202
Longitude: -123.8806948324967

12:30 Refusal (bent rod) at 4.5 feet. Move WS-SB-7 west



Picture taken at: 12:31
Caption: WS-SB-7 relocated
Latitude: 45.69302756391058
Longitude: -123.8804640587706

12:57 Set temp well in WS-SB-7 with screen from 10-15 feet bgs. Well is dry. Remove screen and advance to 20 feet.

13:14 Water at 8.81 feet in WS-SB-7 after reinstalling screen from 15-20.

13:29 Start drilling WS-SB-6



Picture taken at: 13:30
Caption: WS-SB-6
Latitude: 45.69315230648286
Longitude: -123.8806125569164

13:58 Refusal at 6 feet bgs, move over 1 foot and readvance

14:09 Reach final depth (15. ft bgs) at WS-SB-6, Holocene takes lunch

14:30 WS-SB-6 dewater, allow to recover

15:00 Start drilling WS-SB-2, Adrienne takes samples to UPS

Time Notes



Picture taken at: 15:16
Caption: WS-SB-2
Latitude: 45.69426593515249
Longitude: -123.8804513083633

15:40 Reach 15 feet at WS-SB-2. Limited water. Borehole collapses. Drive a point to install temp well from 15 to 20 feet bgs



Picture taken at: 15:42
Caption: WS -SB-2
Latitude: 45.69307389614585
Longitude: -123.8807555634435

16:24 Set up on WS-SB-4



Picture taken at: 16:25
Caption: WS-SB-4
Latitude: 45.69414701367131
Longitude: -123.8804485763725

Time Notes



Picture taken at: 17:29
Caption: WS-SB-4
Latitude: 45.69308323067832
Longitude: -123.8807538988742

17:31 Set temp well in WS-SB-4, 15-20 feet bgs

17:55 Collect equipment blank sample, clean up

18:29 Holocene offsite, DAM offsite

By: Adrienne Venegas

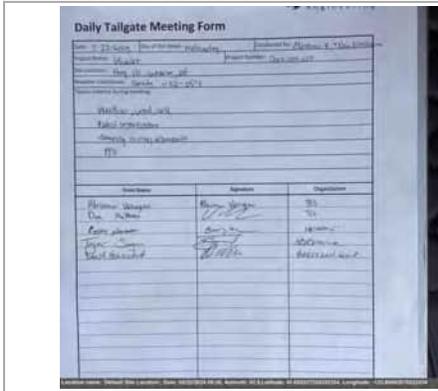
Date	<u>05/22/2024</u>	Contractor	<u>Holocene</u>
Staff On-Site	<u>Adrienne Venegas, Don Malkemus</u>	Crew	<u>Tyler and Casey</u>
Staff From Time	<u>07:37</u>	From Time	<u>08:38</u>
Staff To Time	<u>19:00</u>	To Time	<u>18:00</u>
Weather	<u>Cloudy</u>	Tailgate Meeting?	<u>YES</u>
Equipment	<u></u>	Remarks	<u></u>

Work Summary

Time	Notes
07:30	PID calibration: Zero - 0.0 ppm Span - 99.5 ppm

08:32	TEI on site at Wheeler
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08:39	Holocene and Dana on site. TGM
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Picture taken at: 08:56
Caption: DTM
Latitude: 45.69333722433333
Longitude: -123.8808257623333

09:00	Prepping for River sediment samples
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10:00	WS-RS-1. 0-2 feet bgs: Wood and other organic debris with fine to coarse grained sand and silt, trace subangular to subrounded gravel up to 2" in diameter, dark gray to black, wet. 2-3 feet bgs: loose, dark gray silty sand, very fine to fine grained, wet, low plasticity fines.
-------	---



Picture taken at: 10:01
Caption: WS-RS-1
Latitude: 45.69318826419678
Longitude: -123.8812036644386

Time Notes



Picture taken at: 11:43
Caption: Slight sheen in water near WS-RS-1
Latitude: 45.69315668566666
Longitude: -123.8812446258333

10:14 WS-RS-2.
0-2 feet bgs: medium dense, dark gray to black, wet, fine to coarse grained sand with low plasticity silt and subangular to subrounded gravel up to 2" in diameter, abundant wood and organic debris.
2-3 feet bgs: loose, very dark gray to black, wet, fine to coarse grained sand with low plasticity silt



Picture taken at: 10:41
Caption: WS-RS-2
Latitude: 45.69358819999302
Longitude: -123.8811277806158



Picture taken at: 10:41
Caption: WS-RS-2 soils (0-1 is leftmost top to bottom, 2-3 is rightmost top to bottom)
Latitude: 45.69360188453128
Longitude: -123.8811139290625

10:45 WS-RS-3.
0-1 foot bgs: medium dense, dark gray to black, wet, fine to coarse grained sand with low plasticity silt, abundant wood and organic debris.
1 to 2.5 feet bgs: loose, wet, dark gray subrounded to rounded gravel and cobbles up to 6 inches in diameter with fine to coarse-grained sand and low plasticity silt.
2.5-3 feet bgs: loose, dark gray silty sand, very fine to fine grained, wet, low plasticity fines.

Time Notes



Picture taken at: 11:24
Caption: WS-RS-3
Latitude: 45.69465213275436
Longitude: -123.8808050691799



Picture taken at: 11:16
Caption: WS-RS-3 soils (0-1 is leftmost top to bottom, 2-3 is rightmost top to bottom)
Latitude: 45.6946
Longitude: 123.8808216666667

11:30 Incremental sampling. Moving/remeasuring sample locations based on field observation (vs. aerial used for figure map).



Picture taken at: 14:51
Caption: Set up for WS-IMS-1 - looking west
Latitude: 45.69343833333333
Longitude: 123.880495



Picture taken at: 14:52
Caption: Set up for WS-IMS-1 - looking north
Latitude: 45.69333333333333
Longitude: 123.88075333333333

Time	Notes
	 <p>Picture taken at: 16:14</p> <p>Caption: Soils/material encountered in burn pit area - consistently gravel and cobbles up to 8 inches in diameter. Some areas heavily rooted in upper 3 inches bgs.</p> <p>Latitude: 45.6934666666667</p> <p>Longitude: 123.8807966666667</p>
18:02	Off site

By: Don Malkemus

Date	<u>05/22/2024</u>	Contractor	<u>Holocene Drilling</u>
Staff On-Site	<u>Adrienne Venegas, Don Malkemus</u>	Crew	<u>Tyler Sagon, Casey Newman</u>
Staff From Time	<u>06:45</u>	From Time	<u>08:38</u>
Staff To Time	<u>19:30</u>	To Time	<u>18:00</u>
Weather	<u>Cloudy High Winds</u>	Tailgate Meeting?	<u>YES</u>
Equipment	<u>Geoprobe 6011 DT drill rig</u>	Remarks	<u></u>

Work Summary

Drilling, sediment sampling, soil sampling, groundwater sampling

Time	Notes
06:45	Begin prep
07:04	Calibrate meters
08:35	Onsite.
08:38	Holocene, HEG onsite
08:39	Health and safety tailgate
09:09	Holocene and Adrienne begin collecting sediment samples. DAM starts collecting water samples.
09:22	WS-SB-6 sample turbid. Light brown even after field filter, dewatered after 1.5 liters
	<div data-bbox="181 1115 1334 1507" data-label="Image"> <p>Picture taken at: 09:23 Caption: WS-SB-6-GW-10-15 Latitude: 45.69323622985058 Longitude: -123.8806460702526</p> </div>
10:11	WS-SB-2 dewatered after ~1200 ml. Allow to recover
11:37	WS-SB-4 dewatered after ~2000 ml, allow to recover. Check WS-SB-2, recovered to 18.2 feet, 1.8 feet in 1.5 hours.
12:17	Start drilling WS-SB-3

Time Notes



Picture taken at: 12:17
Caption: WS-SB-3
Latitude: 45.69409139585455
Longitude: -123.8801322341244



Picture taken at: 13:18
Caption: WS-SB-3
Latitude: 45.6940799060375
Longitude: -123.8801322577269

13:19 Start drilling WS-SB-5



Picture taken at: 13:20
Caption: WS-SB-5
Latitude: 45.69408972555894
Longitude: -123.880154949817



Picture taken at: 14:09
Caption: WS-SB-5
Latitude: 45.69409719851573
Longitude: -123.8801303715891

14:35 Start drilling WS-SB-1

Time Notes



Picture taken at: 14:52
Caption: WS-SB-1
Latitude: 45.69409160709432
Longitude: -123.8805391661788



Picture taken at: 14:54
Caption: WS-SB-1
Latitude: 45.69407775100225
Longitude: -123.8801539979869

16:07 Start drilling WS-SB-10



Picture taken at: 16:23
Caption: WS-SB-10
Latitude: 45.69461615076335
Longitude: -123.8806727292628



Picture taken at: 16:37
Caption: WS-SB-10
Latitude: 45.69406896125788
Longitude: -123.8801291339544

16:21 WS-SB-5 dewater after ~750 ml, allow to recover

Time	Notes
16:38	Finish drilling, HEG offsite, Holocene cleans up, pulls wells and fills holes.
17:43	Collect equipment blanks from hand auger and drilling shoe
18:02	Holocene offsite. Adrienne continues incremental sampling, Don samples groundwater from WS-SB-1
19:24	DAM offsite

By: Adrienne Venegas

Date	<u>05/23/2024</u>	Contractor	<u>N/A</u>
Staff On-Site	<u>Adrienne Venegas</u>	Crew	<u></u>
Staff From Time	<u>06:10</u>	From Time	<u></u>
Staff To Time	<u></u>	To Time	<u></u>
Weather	<u>Cloudy</u>	Tailgate Meeting?	<u>NO</u>
Equipment	<u></u>	Remarks	<u></u>

Work Summary

Time	Notes
06:20	Arrived at Wheeler. Collecting gw samples
07:49	Continuing incremental sampling in burn pit (replicate and triplicate)
12:20	Continuing groundwater sampling.
12:45	Insufficient sample collected. Will return this afternoon to allow well to recharge. TEI off site to package and ship samples to Apex via UPS

Signature Adrienne Venegas

Low-Flow Groundwater Sampling Field Log

Well ID:	WS-28-4
Date:	5/22/24

Site Name:	Wheeler Property
Field Personnel:	Don Malkus

Sample ID:	WS-28-4 - GW-15-2a
Weather:	cloudy, windy

Well depth:	7.0	feet
Well diameter:	1	inches
Total depth:	2.0	ft BTOC
Well cap condition:	OK	
Well casing condition:	OK	

Depth to top of screen:	15	ft BTOC
Depth to bottom of screen:	2.0	ft BTOC
Depth to water, pre-installation:		ft BTOC
Pump intake depth:	19	ft BTOC
PID/FID reading:		ppm

analyte/method	container/preservative

Time	pH (SU)		Conductivity (mS/cm)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Temperature (degrees C)		ORP* (mV)	Volume Pumped (mL)	Pumping Rate (ml/min)	Depth to water (ft BTOC)
	Reading	Change	Reading	Change	Reading	Change	Reading	Change	Reading	Change				
1041		NA		NA		NA		NA		NA			200	7.45
1118	7.02		925		13.56		168		13.96		41	500	200	9.55
1123	6.76		5220		2.16		71000		13.21		-60	1000	200	12.11
1129	6.13		2840		1.58		71,000		12.76		-19	2000	200	10.50
1130	dewatered		allow to recast											19.8
0650	de-aerated		de-aerated after ~ 600 mL (3 VOFTS + 1/4" Lamber)											
1225	(11)		~ 200 mL (1/4" Lamber)											
Stability parameters:	± 0.1 SU		± 3%		± 10%		± 15%		± 0.5 °C					* ORP is not required stability parameter

5-23-2024
 (11)
 de-aerated after ~ 600 mL (3 VOFTS + 1/4" Lamber)
 ~ 200 mL (1/4" Lamber)

1300ft → Sample 3 250 ml
 1715 → Sample 2 500 ml



Appendix E

Laboratory Analytical Reports





ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Wednesday, June 19, 2024

James Farrow
Terraphase Engineering
610 SW Broadway #406
Portland, OR 97205

RE: A4E1513 - Highway 101 Former Mill Site - O053.009.003

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4E1513, which was received by the laboratory on 5/22/2024 at 11:04:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information				
<u>Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.</u>				
(See Cooler Receipt Form for details)				
Cooler #1	5.6	degC	Cooler #2	
Cooler #3	1.4	degC		

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report. All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

Darrell Auvil, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WS-SB-6-0.0-3.0	A4E1513-01	Soil	05/21/24 14:00	05/22/24 11:04
WS-SB-6-5.0-8.5	A4E1513-02	Soil	05/21/24 14:30	05/22/24 11:04
WS-SB-7-1.0-2.5	A4E1513-03	Soil	05/21/24 12:35	05/22/24 11:04
WS-SB-7-5.0-7.5	A4E1513-04	Soil	05/21/24 12:45	05/22/24 11:04
WS-SB-8-0.0-3.5	A4E1513-05	Soil	05/21/24 10:00	05/22/24 11:04
WS-SB-8-5.0-7.5	A4E1513-06	Soil	05/21/24 10:05	05/22/24 11:04
WS-SB-9-0.0-3.5	A4E1513-07	Soil	05/21/24 11:05	05/22/24 11:04
WS-SB-9-5.0-8.0	A4E1513-08	Soil	05/21/24 11:15	05/22/24 11:04
WS-SB-7-GW-15-20	A4E1513-09	Water	05/21/24 14:00	05/22/24 11:04
WS-SB-8-GW-9.5-14.5	A4E1513-10	Water	05/21/24 11:20	05/22/24 11:04
WS-SB-9-GW-9-14	A4E1513-11	Water	05/21/24 12:00	05/22/24 11:04

Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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ANALYTICAL SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-6-0.0-3.0 (A4E1513-01)				Matrix: Soil		Batch: 24E0827		
Gasoline Range Organics	ND	---	26.1	mg/kg dry	1	05/24/24 00:43	NWTPH-HCID	
Diesel Range Organics	ND	---	65.3	mg/kg dry	1	05/24/24 00:43	NWTPH-HCID	
Oil Range Organics	ND	---	131	mg/kg dry	1	05/24/24 00:43	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/24/24 00:43</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/24/24 00:43</i>	<i>NWTPH-HCID</i>
WS-SB-6-5.0-8.5 (A4E1513-02)				Matrix: Soil		Batch: 24E0827		
Gasoline Range Organics	ND	---	25.0	mg/kg dry	1	05/24/24 02:05	NWTPH-HCID	
Diesel Range Organics	ND	---	62.5	mg/kg dry	1	05/24/24 02:05	NWTPH-HCID	
Oil Range Organics	DET	---	125	mg/kg dry	1	05/24/24 02:05	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 91 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/24/24 02:05</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>94 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/24/24 02:05</i>	<i>NWTPH-HCID</i>
WS-SB-7-1.0-2.5 (A4E1513-03)				Matrix: Soil		Batch: 24E0827		
Gasoline Range Organics	ND	---	22.0	mg/kg dry	1	05/23/24 22:19	NWTPH-HCID	
Diesel Range Organics	ND	---	55.0	mg/kg dry	1	05/23/24 22:19	NWTPH-HCID	
Oil Range Organics	ND	---	110	mg/kg dry	1	05/23/24 22:19	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 103 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/23/24 22:19</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>106 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/23/24 22:19</i>	<i>NWTPH-HCID</i>
WS-SB-7-5.0-7.5 (A4E1513-04)				Matrix: Soil		Batch: 24E0827		
Gasoline Range Organics	ND	---	30.3	mg/kg dry	1	05/23/24 22:39	NWTPH-HCID	
Diesel Range Organics	ND	---	75.7	mg/kg dry	1	05/23/24 22:39	NWTPH-HCID	
Oil Range Organics	ND	---	151	mg/kg dry	1	05/23/24 22:39	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 94 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/23/24 22:39</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>106 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/23/24 22:39</i>	<i>NWTPH-HCID</i>
WS-SB-8-0.0-3.5 (A4E1513-05)				Matrix: Soil		Batch: 24E0827		
Gasoline Range Organics	ND	---	22.8	mg/kg dry	1	05/23/24 23:00	NWTPH-HCID	
Diesel Range Organics	ND	---	57.0	mg/kg dry	1	05/23/24 23:00	NWTPH-HCID	
Oil Range Organics	ND	---	114	mg/kg dry	1	05/23/24 23:00	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/23/24 23:00</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>99 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/23/24 23:00</i>	<i>NWTPH-HCID</i>

Apex Laboratories

Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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ANALYTICAL SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-8-5.0-7.5 (A4E1513-06)				Matrix: Soil		Batch: 24E0827		
Gasoline Range Organics	ND	---	23.1	mg/kg dry	1	05/23/24 23:20	NWTPH-HCID	
Diesel Range Organics	ND	---	57.8	mg/kg dry	1	05/23/24 23:20	NWTPH-HCID	
Oil Range Organics	ND	---	116	mg/kg dry	1	05/23/24 23:20	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 100 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/23/24 23:20</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>103 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/23/24 23:20</i>	<i>NWTPH-HCID</i>
WS-SB-9-0.0-3.5 (A4E1513-07)				Matrix: Soil		Batch: 24E0827		
Gasoline Range Organics	ND	---	25.4	mg/kg dry	1	05/24/24 01:24	NWTPH-HCID	
Diesel Range Organics	ND	---	63.4	mg/kg dry	1	05/24/24 01:24	NWTPH-HCID	
Oil Range Organics	DET	---	127	mg/kg dry	1	05/24/24 01:24	NWTPH-HCID	F-03
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/24/24 01:24</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>103 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/24/24 01:24</i>	<i>NWTPH-HCID</i>
WS-SB-9-5.0-8.0 (A4E1513-08)				Matrix: Soil		Batch: 24E0827		
Gasoline Range Organics	ND	---	21.1	mg/kg dry	1	05/24/24 01:45	NWTPH-HCID	
Diesel Range Organics	ND	---	52.8	mg/kg dry	1	05/24/24 01:45	NWTPH-HCID	
Oil Range Organics	ND	---	106	mg/kg dry	1	05/24/24 01:45	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/24/24 01:45</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>103 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/24/24 01:45</i>	<i>NWTPH-HCID</i>
WS-SB-7-GW-15-20 (A4E1513-09)				Matrix: Water		Batch: 24E0882		
Gasoline Range Organics	ND	---	0.108	mg/L	1	05/24/24 23:11	NWTPH-HCID	
Diesel Range Organics	ND	---	0.269	mg/L	1	05/24/24 23:11	NWTPH-HCID	
Oil Range Organics	ND	---	0.269	mg/L	1	05/24/24 23:11	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/24/24 23:11</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>58 %</i>		<i>10-120 %</i>		<i>1</i>	<i>05/24/24 23:11</i>	<i>NWTPH-HCID</i>
WS-SB-8-GW-9.5-14.5 (A4E1513-10)				Matrix: Water		Batch: 24E0882		
Gasoline Range Organics	ND	---	0.0952	mg/L	1	05/24/24 23:35	NWTPH-HCID	
Diesel Range Organics	ND	---	0.238	mg/L	1	05/24/24 23:35	NWTPH-HCID	
Oil Range Organics	ND	---	0.238	mg/L	1	05/24/24 23:35	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/24/24 23:35</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>64 %</i>		<i>10-120 %</i>		<i>1</i>	<i>05/24/24 23:35</i>	<i>NWTPH-HCID</i>

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
---	---	---

ANALYTICAL SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
			Matrix: Water			Batch: 24E0882		
Gasoline Range Organics	ND	---	0.102	mg/L	1	05/24/24 23:58	NWTPH-HCID	
Diesel Range Organics	ND	---	0.255	mg/L	1	05/24/24 23:58	NWTPH-HCID	
Oil Range Organics	ND	---	0.255	mg/L	1	05/24/24 23:58	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/24/24 23:58</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>48 %</i>		<i>10-120 %</i>		<i>1</i>	<i>05/24/24 23:58</i>	<i>NWTPH-HCID</i>

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ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-6-5.0-8.5 (A4E1513-02)			Matrix: Soil		Batch: 24F0059			
Diesel	ND	---	23.6	mg/kg dry	1	06/04/24 19:09	NWTPH-Dx/SG	
Oil	90.4	---	47.3	mg/kg dry	1	06/04/24 19:09	NWTPH-Dx/SG	F-03
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>06/04/24 19:09</i>	<i>NWTPH-Dx/SG</i>
WS-SB-9-0.0-3.5 (A4E1513-07)			Matrix: Soil		Batch: 24F0059			
Diesel	ND	---	24.4	mg/kg dry	1	06/04/24 19:50	NWTPH-Dx/SG	
Oil	113	---	48.8	mg/kg dry	1	06/04/24 19:50	NWTPH-Dx/SG	F-03
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>06/04/24 19:50</i>	<i>NWTPH-Dx/SG</i>

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ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-9-0.0-3.5 (A4E1513-07)				Matrix: Soil		Batch: 24F0510		A-01, C-07
Aroclor 1016	ND	---	12.2	ug/kg dry	1	06/14/24 20:28	EPA 8082A	
Aroclor 1221	ND	---	17.5	ug/kg dry	1	06/14/24 20:28	EPA 8082A	R-02
Aroclor 1232	ND	---	12.2	ug/kg dry	1	06/14/24 20:28	EPA 8082A	
Aroclor 1242	ND	---	12.2	ug/kg dry	1	06/14/24 20:28	EPA 8082A	
Aroclor 1248	ND	---	12.2	ug/kg dry	1	06/14/24 20:28	EPA 8082A	
Aroclor 1254	ND	---	12.2	ug/kg dry	1	06/14/24 20:28	EPA 8082A	
Aroclor 1260	ND	---	12.2	ug/kg dry	1	06/14/24 20:28	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>			<i>Recovery: 55 %</i>	<i>Limits: 60-125 %</i>	<i>1</i>	<i>06/14/24 20:28</i>	<i>EPA 8082A</i>	<i>S-06</i>

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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-6-0.0-3.0 (A4E1513-01RE2)				Matrix: Soil		Batch: 24E0825		
Acenaphthene	ND	---	3.45	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
Acenaphthylene	ND	---	3.45	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
Anthracene	ND	---	3.45	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
Benz(a)anthracene	6.04	---	3.45	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
Benzo(a)pyrene	14.4	---	5.17	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
Benzo(b)fluoranthene	12.4	---	5.17	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
Benzo(k)fluoranthene	5.74	---	5.17	ug/kg dry	1	05/23/24 15:28	EPA 8270E	M-05
Benzo(g,h,i)perylene	8.72	---	3.45	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
Chrysene	8.52	---	3.45	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	3.45	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
Fluoranthene	15.0	---	3.45	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
Fluorene	ND	---	3.45	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
Indeno(1,2,3-cd)pyrene	7.35	---	3.45	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
1-Methylnaphthalene	ND	---	6.89	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
2-Methylnaphthalene	ND	---	6.89	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
Naphthalene	ND	---	6.89	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
Phenanthrene	9.20	---	3.45	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
Pyrene	20.0	---	3.45	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
Dibenzofuran	ND	---	3.45	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	34.5	ug/kg dry	1	05/23/24 15:28	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 101 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>05/23/24 15:28</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>90 %</i>		<i>44-120 %</i>		<i>1</i>	<i>05/23/24 15:28</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>101 %</i>		<i>33-122 %</i>		<i>1</i>	<i>05/23/24 15:28</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>109 %</i>		<i>54-127 %</i>		<i>1</i>	<i>05/23/24 15:28</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>93 %</i>		<i>35-120 %</i>		<i>1</i>	<i>05/23/24 15:28</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>99 %</i>		<i>39-132 %</i>		<i>1</i>	<i>05/23/24 15:28</i>	<i>EPA 8270E</i>

WS-SB-6-5.0-8.5 (A4E1513-02)				Matrix: Soil		Batch: 24E0825		
Acenaphthene	ND	---	34.1	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
Acenaphthylene	ND	---	34.1	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
Anthracene	ND	---	34.1	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
Benz(a)anthracene	ND	---	34.1	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
Benzo(a)pyrene	70.6	---	51.0	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
Benzo(b)fluoranthene	57.6	---	51.0	ug/kg dry	10	05/23/24 16:38	EPA 8270E	

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ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-6-5.0-8.5 (A4E1513-02)				Matrix: Soil		Batch: 24E0825		
Benzo(k)fluoranthene	ND	---	51.0	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
Benzo(g,h,i)perylene	44.9	---	34.1	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
Chrysene	51.9	---	34.1	ug/kg dry	10	05/23/24 16:38	EPA 8270E	M-05
Dibenz(a,h)anthracene	ND	---	34.1	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
Fluoranthene	44.2	---	34.1	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
Fluorene	ND	---	34.1	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
Indeno(1,2,3-cd)pyrene	36.7	---	34.1	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
1-Methylnaphthalene	ND	---	68.0	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
2-Methylnaphthalene	ND	---	68.0	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
Naphthalene	ND	---	68.0	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
Phenanthrene	34.5	---	34.1	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
Pyrene	52.7	---	34.1	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
Dibenzofuran	ND	---	34.1	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	341	ug/kg dry	10	05/23/24 16:38	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 88 %</i>		<i>Limits: 37-122 %</i>	<i>10</i>	<i>05/23/24 16:38</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>		<i>73 %</i>		<i>44-120 %</i>	<i>10</i>	<i>05/23/24 16:38</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>81 %</i>		<i>33-122 %</i>	<i>10</i>	<i>05/23/24 16:38</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>		<i>93 %</i>		<i>54-127 %</i>	<i>10</i>	<i>05/23/24 16:38</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>78 %</i>		<i>35-120 %</i>	<i>10</i>	<i>05/23/24 16:38</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>95 %</i>		<i>39-132 %</i>	<i>10</i>	<i>05/23/24 16:38</i>	<i>EPA 8270E</i>	

WS-SB-7-1.0-2.5 (A4E1513-03)				Matrix: Soil		Batch: 24E0825		
Acenaphthene	ND	---	2.95	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
Acenaphthylene	ND	---	2.95	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
Anthracene	ND	---	2.95	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
Benz(a)anthracene	ND	---	2.95	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
Benzo(a)pyrene	ND	---	4.43	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
Benzo(b)fluoranthene	ND	---	4.43	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
Benzo(k)fluoranthene	ND	---	4.43	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	2.95	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
Chrysene	ND	---	2.95	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	2.95	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
Fluoranthene	ND	---	2.95	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
Fluorene	ND	---	2.95	ug/kg dry	1	05/23/24 17:47	EPA 8270E	

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-7-1.0-2.5 (A4E1513-03)			Matrix: Soil			Batch: 24E0825		
Indeno(1,2,3-cd)pyrene	ND	---	2.95	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
1-Methylnaphthalene	ND	---	5.90	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
2-Methylnaphthalene	ND	---	5.90	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
Naphthalene	ND	---	5.90	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
Phenanthrene	ND	---	2.95	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
Pyrene	ND	---	2.95	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
Dibenzofuran	ND	---	2.95	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	29.5	ug/kg dry	1	05/23/24 17:47	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 100 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>05/23/24 17:47</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>				<i>82 %</i>		<i>44-120 %</i>		<i>1</i>
<i>Phenol-d6 (Surr)</i>				<i>100 %</i>		<i>33-122 %</i>		<i>1</i>
<i>p-Terphenyl-d14 (Surr)</i>				<i>110 %</i>		<i>54-127 %</i>		<i>1</i>
<i>2-Fluorophenol (Surr)</i>				<i>91 %</i>		<i>35-120 %</i>		<i>1</i>
<i>2,4,6-Tribromophenol (Surr)</i>				<i>94 %</i>		<i>39-132 %</i>		<i>1</i>
WS-SB-7-5.0-7.5 (A4E1513-04)			Matrix: Soil			Batch: 24E0825		
Acenaphthene	ND	---	3.93	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
Acenaphthylene	ND	---	3.93	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
Anthracene	ND	---	3.93	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
Benz(a)anthracene	ND	---	3.93	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
Benzo(a)pyrene	ND	---	5.89	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
Benzo(b)fluoranthene	ND	---	5.89	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
Benzo(k)fluoranthene	ND	---	5.89	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	3.93	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
Chrysene	ND	---	3.93	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	3.93	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
Fluoranthene	ND	---	3.93	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
Fluorene	ND	---	3.93	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	3.93	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
1-Methylnaphthalene	ND	---	7.85	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
2-Methylnaphthalene	ND	---	7.85	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
Naphthalene	ND	---	7.85	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
Phenanthrene	ND	---	3.93	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
Pyrene	ND	---	3.93	ug/kg dry	1	05/23/24 18:22	EPA 8270E	

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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-7-5.0-7.5 (A4E1513-04)			Matrix: Soil		Batch: 24E0825			
Dibenzofuran	ND	---	3.93	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	39.3	ug/kg dry	1	05/23/24 18:22	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 99 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>05/23/24 18:22</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>85 %</i>		<i>44-120 %</i>		<i>1</i>	<i>05/23/24 18:22</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>94 %</i>		<i>33-122 %</i>		<i>1</i>	<i>05/23/24 18:22</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>103 %</i>		<i>54-127 %</i>		<i>1</i>	<i>05/23/24 18:22</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>88 %</i>		<i>35-120 %</i>		<i>1</i>	<i>05/23/24 18:22</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>94 %</i>		<i>39-132 %</i>		<i>1</i>	<i>05/23/24 18:22</i>	<i>EPA 8270E</i>
WS-SB-8-0.0-3.5 (A4E1513-05)			Matrix: Soil		Batch: 24E0825			
Acenaphthene	ND	---	3.11	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Acenaphthylene	ND	---	3.11	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Anthracene	ND	---	3.11	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Benz(a)anthracene	ND	---	3.11	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Benzo(a)pyrene	ND	---	4.67	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Benzo(b)fluoranthene	ND	---	4.67	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Benzo(k)fluoranthene	ND	---	4.67	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	3.11	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Chrysene	ND	---	3.11	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	3.11	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Fluoranthene	ND	---	3.11	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Fluorene	ND	---	3.11	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	3.11	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
1-Methylnaphthalene	ND	---	6.22	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
2-Methylnaphthalene	ND	---	6.22	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Naphthalene	ND	---	6.22	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Phenanthrene	ND	---	3.11	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Pyrene	ND	---	3.11	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Dibenzofuran	ND	---	3.11	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	31.1	ug/kg dry	1	05/23/24 18:56	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 99 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>05/23/24 18:56</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>81 %</i>		<i>44-120 %</i>		<i>1</i>	<i>05/23/24 18:56</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>93 %</i>		<i>33-122 %</i>		<i>1</i>	<i>05/23/24 18:56</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>101 %</i>		<i>54-127 %</i>		<i>1</i>	<i>05/23/24 18:56</i>	<i>EPA 8270E</i>

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-8-0.0-3.5 (A4E1513-05)				Matrix: Soil		Batch: 24E0825		
<i>Surrogate: 2-Fluorophenol (Surr)</i>		<i>Recovery: 80 %</i>		<i>Limits: 35-120 %</i>	<i>1</i>	<i>05/23/24 18:56</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>80 %</i>		<i>39-132 %</i>	<i>1</i>	<i>05/23/24 18:56</i>	<i>EPA 8270E</i>	
WS-SB-8-5.0-7.5 (A4E1513-06)				Matrix: Soil		Batch: 24E0825		
Acenaphthene	ND	---	3.28	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Acenaphthylene	ND	---	3.28	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Anthracene	ND	---	3.28	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Benz(a)anthracene	ND	---	3.28	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Benzo(a)pyrene	ND	---	4.92	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Benzo(b)fluoranthene	ND	---	4.92	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Benzo(k)fluoranthene	ND	---	4.92	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	3.28	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Chrysene	ND	---	3.28	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	3.28	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Fluoranthene	ND	---	3.28	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Fluorene	ND	---	3.28	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	3.28	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
1-Methylnaphthalene	ND	---	6.55	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
2-Methylnaphthalene	ND	---	6.55	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Naphthalene	ND	---	6.55	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Phenanthrene	ND	---	3.28	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Pyrene	ND	---	3.28	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Dibenzofuran	ND	---	3.28	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	32.8	ug/kg dry	1	05/23/24 19:31	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 100 %</i>		<i>Limits: 37-122 %</i>	<i>1</i>	<i>05/23/24 19:31</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>		<i>73 %</i>		<i>44-120 %</i>	<i>1</i>	<i>05/23/24 19:31</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>100 %</i>		<i>33-122 %</i>	<i>1</i>	<i>05/23/24 19:31</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>		<i>94 %</i>		<i>54-127 %</i>	<i>1</i>	<i>05/23/24 19:31</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>93 %</i>		<i>35-120 %</i>	<i>1</i>	<i>05/23/24 19:31</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>85 %</i>		<i>39-132 %</i>	<i>1</i>	<i>05/23/24 19:31</i>	<i>EPA 8270E</i>	
WS-SB-9-0.0-3.5 (A4E1513-07)				Matrix: Soil		Batch: 24E0825		
Acenaphthene	ND	---	14.4	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
Acenaphthylene	ND	---	14.4	ug/kg dry	4	05/23/24 17:12	EPA 8270E	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-9-0.0-3.5 (A4E1513-07)				Matrix: Soil		Batch: 24E0825		
Anthracene	ND	---	14.4	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
Benz(a)anthracene	30.6	---	14.4	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
Benzo(a)pyrene	83.1	---	21.6	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
Benzo(b)fluoranthene	75.2	---	21.6	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
Benzo(k)fluoranthene	31.6	---	21.6	ug/kg dry	4	05/23/24 17:12	EPA 8270E	M-05
Benzo(g,h,i)perylene	54.6	---	14.4	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
Chrysene	52.6	---	14.4	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	14.4	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
Fluoranthene	98.7	---	14.4	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
Fluorene	ND	---	14.4	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
Indeno(1,2,3-cd)pyrene	43.5	---	14.4	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
1-Methylnaphthalene	ND	---	28.8	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
2-Methylnaphthalene	ND	---	28.8	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
Naphthalene	ND	---	28.8	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
Phenanthrene	52.8	---	14.4	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
Pyrene	128	---	14.4	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
Dibenzofuran	ND	---	14.4	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	144	ug/kg dry	4	05/23/24 17:12	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 88 %</i>		<i>Limits: 37-122 %</i>		<i>4</i>	<i>05/23/24 17:12</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>76 %</i>		<i>44-120 %</i>		<i>4</i>	<i>05/23/24 17:12</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>81 %</i>		<i>33-122 %</i>		<i>4</i>	<i>05/23/24 17:12</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>89 %</i>		<i>54-127 %</i>		<i>4</i>	<i>05/23/24 17:12</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>76 %</i>		<i>35-120 %</i>		<i>4</i>	<i>05/23/24 17:12</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>89 %</i>		<i>39-132 %</i>		<i>4</i>	<i>05/23/24 17:12</i>	<i>EPA 8270E</i>

WS-SB-9-5.0-8.0 (A4E1513-08RE1)				Matrix: Soil		Batch: 24E0825		
Acenaphthene	ND	---	11.8	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
Acenaphthylene	ND	---	11.8	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
Anthracene	ND	---	11.8	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
Benz(a)anthracene	21.2	---	11.8	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
Benzo(a)pyrene	60.3	---	17.6	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
Benzo(b)fluoranthene	52.3	---	17.6	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
Benzo(k)fluoranthene	20.4	---	17.6	ug/kg dry	4	05/23/24 14:19	EPA 8270E	M-05
Benzo(g,h,i)perylene	46.3	---	11.8	ug/kg dry	4	05/23/24 14:19	EPA 8270E	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-9-5.0-8.0 (A4E1513-08RE1)			Matrix: Soil			Batch: 24E0825		
Chrysene	31.8	---	11.8	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	11.8	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
Fluoranthene	55.7	---	11.8	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
Fluorene	ND	---	11.8	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
Indeno(1,2,3-cd)pyrene	35.2	---	11.8	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
1-Methylnaphthalene	ND	---	23.5	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
2-Methylnaphthalene	ND	---	23.5	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
Naphthalene	34.6	---	23.5	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
Phenanthrene	39.3	---	11.8	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
Pyrene	73.9	---	11.8	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
Dibenzofuran	ND	---	11.8	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	118	ug/kg dry	4	05/23/24 14:19	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>			<i>Recovery: 87 %</i>	<i>Limits: 37-122 %</i>	<i>4</i>	<i>05/23/24 14:19</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>			<i>81 %</i>	<i>44-120 %</i>	<i>4</i>	<i>05/23/24 14:19</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>			<i>84 %</i>	<i>33-122 %</i>	<i>4</i>	<i>05/23/24 14:19</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>			<i>100 %</i>	<i>54-127 %</i>	<i>4</i>	<i>05/23/24 14:19</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>			<i>79 %</i>	<i>35-120 %</i>	<i>4</i>	<i>05/23/24 14:19</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>			<i>90 %</i>	<i>39-132 %</i>	<i>4</i>	<i>05/23/24 14:19</i>	<i>EPA 8270E</i>	
WS-SB-7-GW-15-20 (A4E1513-09)			Matrix: Water			Batch: 24E0858		
Acenaphthene	ND	---	0.0220	ug/L	1	05/28/24 21:56	EPA 8270E	
Acenaphthylene	ND	---	0.0220	ug/L	1	05/28/24 21:56	EPA 8270E	
Anthracene	ND	---	0.0220	ug/L	1	05/28/24 21:56	EPA 8270E	
Benz(a)anthracene	ND	---	0.0220	ug/L	1	05/28/24 21:56	EPA 8270E	
Benzo(a)pyrene	ND	---	0.0330	ug/L	1	05/28/24 21:56	EPA 8270E	
Benzo(b)fluoranthene	ND	---	0.0330	ug/L	1	05/28/24 21:56	EPA 8270E	
Benzo(k)fluoranthene	ND	---	0.0330	ug/L	1	05/28/24 21:56	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	0.0220	ug/L	1	05/28/24 21:56	EPA 8270E	
Chrysene	ND	---	0.0220	ug/L	1	05/28/24 21:56	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	0.0220	ug/L	1	05/28/24 21:56	EPA 8270E	
Fluoranthene	ND	---	0.0220	ug/L	1	05/28/24 21:56	EPA 8270E	
Fluorene	ND	---	0.0220	ug/L	1	05/28/24 21:56	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	0.0220	ug/L	1	05/28/24 21:56	EPA 8270E	
1-Methylnaphthalene	ND	---	0.0440	ug/L	1	05/28/24 21:56	EPA 8270E	

Apex Laboratories

Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-7-GW-15-20 (A4E1513-09)			Matrix: Water			Batch: 24E0858		
2-Methylnaphthalene	ND	---	0.0440	ug/L	1	05/28/24 21:56	EPA 8270E	
Naphthalene	ND	---	0.0440	ug/L	1	05/28/24 21:56	EPA 8270E	
Phenanthrene	ND	---	0.0220	ug/L	1	05/28/24 21:56	EPA 8270E	
Pyrene	ND	---	0.0220	ug/L	1	05/28/24 21:56	EPA 8270E	
Dibenzofuran	ND	---	0.0220	ug/L	1	05/28/24 21:56	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	0.220	ug/L	1	05/28/24 21:56	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 66 %</i>		<i>Limits: 44-120 %</i>		<i>1</i>	<i>05/28/24 21:56</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>46 %</i>		<i>44-120 %</i>		<i>1</i>	<i>05/28/24 21:56</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>21 %</i>		<i>10-133 %</i>		<i>1</i>	<i>05/28/24 21:56</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>78 %</i>		<i>50-134 %</i>		<i>1</i>	<i>05/28/24 21:56</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>29 %</i>		<i>19-120 %</i>		<i>1</i>	<i>05/28/24 21:56</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>69 %</i>		<i>43-140 %</i>		<i>1</i>	<i>05/28/24 21:56</i>	<i>EPA 8270E</i>
WS-SB-8-GW-9.5-14.5 (A4E1513-10)			Matrix: Water			Batch: 24E0858		
Acenaphthene	ND	---	0.0235	ug/L	1	05/28/24 22:30	EPA 8270E	
Acenaphthylene	ND	---	0.0235	ug/L	1	05/28/24 22:30	EPA 8270E	
Anthracene	ND	---	0.0235	ug/L	1	05/28/24 22:30	EPA 8270E	
Benz(a)anthracene	ND	---	0.0235	ug/L	1	05/28/24 22:30	EPA 8270E	
Benzo(a)pyrene	ND	---	0.0353	ug/L	1	05/28/24 22:30	EPA 8270E	
Benzo(b)fluoranthene	ND	---	0.0353	ug/L	1	05/28/24 22:30	EPA 8270E	
Benzo(k)fluoranthene	ND	---	0.0353	ug/L	1	05/28/24 22:30	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	0.0235	ug/L	1	05/28/24 22:30	EPA 8270E	
Chrysene	ND	---	0.0235	ug/L	1	05/28/24 22:30	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	0.0235	ug/L	1	05/28/24 22:30	EPA 8270E	
Fluoranthene	ND	---	0.0235	ug/L	1	05/28/24 22:30	EPA 8270E	
Fluorene	ND	---	0.0235	ug/L	1	05/28/24 22:30	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	0.0235	ug/L	1	05/28/24 22:30	EPA 8270E	
1-Methylnaphthalene	ND	---	0.0471	ug/L	1	05/28/24 22:30	EPA 8270E	
2-Methylnaphthalene	ND	---	0.0471	ug/L	1	05/28/24 22:30	EPA 8270E	
Naphthalene	ND	---	0.0471	ug/L	1	05/28/24 22:30	EPA 8270E	
Phenanthrene	ND	---	0.0235	ug/L	1	05/28/24 22:30	EPA 8270E	
Pyrene	ND	---	0.0235	ug/L	1	05/28/24 22:30	EPA 8270E	
Dibenzofuran	ND	---	0.0235	ug/L	1	05/28/24 22:30	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	0.235	ug/L	1	05/28/24 22:30	EPA 8270E	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
			Matrix: Water			Batch: 24E0858		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>			<i>Recovery: 101 %</i>	<i>Limits: 44-120 %</i>	<i>1</i>	<i>05/28/24 22:30</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>			<i>71 %</i>	<i>44-120 %</i>	<i>1</i>	<i>05/28/24 22:30</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>			<i>35 %</i>	<i>10-133 %</i>	<i>1</i>	<i>05/28/24 22:30</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>			<i>83 %</i>	<i>50-134 %</i>	<i>1</i>	<i>05/28/24 22:30</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>			<i>47 %</i>	<i>19-120 %</i>	<i>1</i>	<i>05/28/24 22:30</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>			<i>91 %</i>	<i>43-140 %</i>	<i>1</i>	<i>05/28/24 22:30</i>	<i>EPA 8270E</i>	
			Matrix: Water			Batch: 24E0858		
Acenaphthene	ND	---	0.0189	ug/L	1	05/28/24 23:03	EPA 8270E	
Acenaphthylene	ND	---	0.0189	ug/L	1	05/28/24 23:03	EPA 8270E	
Anthracene	ND	---	0.0189	ug/L	1	05/28/24 23:03	EPA 8270E	
Benz(a)anthracene	ND	---	0.0189	ug/L	1	05/28/24 23:03	EPA 8270E	
Benzo(a)pyrene	ND	---	0.0283	ug/L	1	05/28/24 23:03	EPA 8270E	
Benzo(b)fluoranthene	ND	---	0.0283	ug/L	1	05/28/24 23:03	EPA 8270E	
Benzo(k)fluoranthene	ND	---	0.0283	ug/L	1	05/28/24 23:03	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	0.0189	ug/L	1	05/28/24 23:03	EPA 8270E	
Chrysene	ND	---	0.0189	ug/L	1	05/28/24 23:03	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	0.0189	ug/L	1	05/28/24 23:03	EPA 8270E	
Fluoranthene	ND	---	0.0189	ug/L	1	05/28/24 23:03	EPA 8270E	
Fluorene	ND	---	0.0189	ug/L	1	05/28/24 23:03	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	0.0189	ug/L	1	05/28/24 23:03	EPA 8270E	
1-Methylnaphthalene	ND	---	0.0377	ug/L	1	05/28/24 23:03	EPA 8270E	
2-Methylnaphthalene	ND	---	0.0377	ug/L	1	05/28/24 23:03	EPA 8270E	
Naphthalene	ND	---	0.0377	ug/L	1	05/28/24 23:03	EPA 8270E	
Phenanthrene	ND	---	0.0189	ug/L	1	05/28/24 23:03	EPA 8270E	
Pyrene	ND	---	0.0189	ug/L	1	05/28/24 23:03	EPA 8270E	
Dibenzofuran	ND	---	0.0189	ug/L	1	05/28/24 23:03	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	0.189	ug/L	1	05/28/24 23:03	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>			<i>Recovery: 59 %</i>	<i>Limits: 44-120 %</i>	<i>1</i>	<i>05/28/24 23:03</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>			<i>44 %</i>	<i>44-120 %</i>	<i>1</i>	<i>05/28/24 23:03</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>			<i>17 %</i>	<i>10-133 %</i>	<i>1</i>	<i>05/28/24 23:03</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>			<i>82 %</i>	<i>50-134 %</i>	<i>1</i>	<i>05/28/24 23:03</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>			<i>25 %</i>	<i>19-120 %</i>	<i>1</i>	<i>05/28/24 23:03</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>			<i>73 %</i>	<i>43-140 %</i>	<i>1</i>	<i>05/28/24 23:03</i>	<i>EPA 8270E</i>	

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ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-7-GW-15-20 (A4E1513-09) Matrix: Water								
Batch: 24E1141								
Barium	6.30	---	2.00	ug/L	1	05/31/24 23:13	EPA 6020B	
Lead	ND	---	0.200	ug/L	1	05/31/24 23:13	EPA 6020B	
Mercury	ND	---	0.0800	ug/L	1	05/31/24 23:13	EPA 6020B	
WS-SB-7-GW-15-20 (A4E1513-09RE1) Matrix: Water								
Batch: 24E1141								
Arsenic	ND	---	1.00	ug/L	1	06/03/24 13:30	EPA 6020B	
Cadmium	ND	---	0.200	ug/L	1	06/03/24 13:30	EPA 6020B	
Chromium	ND	---	2.00	ug/L	1	06/03/24 13:30	EPA 6020B	
Selenium	ND	---	1.00	ug/L	1	06/03/24 13:30	EPA 6020B	
Silver	ND	---	0.200	ug/L	1	06/03/24 13:30	EPA 6020B	
WS-SB-8-GW-9.5-14.5 (A4E1513-10) Matrix: Water								
Batch: 24E1141								
Barium	ND	---	2.00	ug/L	1	05/31/24 23:19	EPA 6020B	
Lead	ND	---	0.200	ug/L	1	05/31/24 23:19	EPA 6020B	
Mercury	ND	---	0.0800	ug/L	1	05/31/24 23:19	EPA 6020B	
WS-SB-8-GW-9.5-14.5 (A4E1513-10RE1) Matrix: Water								
Batch: 24E1141								
Arsenic	4.14	---	1.00	ug/L	1	06/03/24 13:36	EPA 6020B	
Cadmium	ND	---	0.200	ug/L	1	06/03/24 13:36	EPA 6020B	
Chromium	ND	---	2.00	ug/L	1	06/03/24 13:36	EPA 6020B	
Selenium	ND	---	1.00	ug/L	1	06/03/24 13:36	EPA 6020B	
Silver	ND	---	0.200	ug/L	1	06/03/24 13:36	EPA 6020B	
WS-SB-9-GW-9-14 (A4E1513-11) Matrix: Water								
Batch: 24E1141								
Barium	2.12	---	2.00	ug/L	1	05/31/24 23:24	EPA 6020B	
Lead	ND	---	0.200	ug/L	1	05/31/24 23:24	EPA 6020B	
Mercury	ND	---	0.0800	ug/L	1	05/31/24 23:24	EPA 6020B	
WS-SB-9-GW-9-14 (A4E1513-11RE1) Matrix: Water								
Batch: 24E1141								

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Darrell Auvil, Client Services Manager



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503-718-2323
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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-9-GW-9-14 (A4E1513-11RE1)				Matrix: Water				
Arsenic	2.86	---	1.00	ug/L	1	06/03/24 13:53	EPA 6020B	
Cadmium	ND	---	0.200	ug/L	1	06/03/24 13:53	EPA 6020B	
Chromium	ND	---	2.00	ug/L	1	06/03/24 13:53	EPA 6020B	
Selenium	ND	---	1.00	ug/L	1	06/03/24 13:53	EPA 6020B	
Silver	ND	---	0.200	ug/L	1	06/03/24 13:53	EPA 6020B	

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-6-0.0-3.0 (A4E1513-01)				Matrix: Soil		Batch: 24E0838		
% Solids	75.8	---	1.00	%	1	05/24/24 07:37	EPA 8000D	
WS-SB-6-5.0-8.5 (A4E1513-02)				Matrix: Soil		Batch: 24E0838		
% Solids	75.4	---	1.00	%	1	05/24/24 07:37	EPA 8000D	
WS-SB-7-1.0-2.5 (A4E1513-03)				Matrix: Soil		Batch: 24E0838		
% Solids	85.4	---	1.00	%	1	05/24/24 07:37	EPA 8000D	
WS-SB-7-5.0-7.5 (A4E1513-04)				Matrix: Soil		Batch: 24E0838		
% Solids	64.9	---	1.00	%	1	05/24/24 07:37	EPA 8000D	
WS-SB-8-0.0-3.5 (A4E1513-05)				Matrix: Soil		Batch: 24E0838		
% Solids	84.3	---	1.00	%	1	05/24/24 07:37	EPA 8000D	
WS-SB-8-5.0-7.5 (A4E1513-06)				Matrix: Soil		Batch: 24E0838		
% Solids	79.0	---	1.00	%	1	05/24/24 07:37	EPA 8000D	
WS-SB-9-0.0-3.5 (A4E1513-07)				Matrix: Soil		Batch: 24E0838		
% Solids	72.8	---	1.00	%	1	05/24/24 07:37	EPA 8000D	
WS-SB-9-5.0-8.0 (A4E1513-08)				Matrix: Soil		Batch: 24E0838		
% Solids	87.1	---	1.00	%	1	05/24/24 07:37	EPA 8000D	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0827 - EPA 3546 (Fuels)						Soil						
Blank (24E0827-BLK1)			Prepared: 05/23/24 06:30			Analyzed: 05/23/24 21:58						
<u>NWTPH-HCID</u>												
Gasoline Range Organics	ND	---	20.0	mg/kg wet	1	---	---	---	---	---	---	
Diesel Range Organics	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Oil Range Organics	ND	---	100	mg/kg wet	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 81 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>86 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (24E0827-DUP1)						Prepared: 05/23/24 06:30 Analyzed: 05/24/24 00:02						
<u>QC Source Sample: Non-SDG (A4E1510-18)</u>												
Gasoline Range Organics	ND	---	27.5	mg/kg dry	1	---	ND	---	---	---	30%	
Diesel Range Organics	ND	---	68.8	mg/kg dry	1	---	ND	---	---	---	30%	
Oil Range Organics	ND	---	138	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>119 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (24E0827-DUP2)						Prepared: 05/23/24 13:11 Analyzed: 05/24/24 03:07						
<u>QC Source Sample: Non-SDG (A4E1518-30)</u>												
Gasoline Range Organics	ND	---	21.3	mg/kg dry	1	---	ND	---	---	---	30%	
Diesel Range Organics	ND	---	53.3	mg/kg dry	1	---	ND	---	---	---	30%	
Oil Range Organics	DET	---	107	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 87 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>91 %</i>		<i>50-150 %</i>		<i>"</i>						
Batch 24E0882 - EPA 3510C (Fuels/Acid Ext.)						Water						
Blank (24E0882-BLK1)			Prepared: 05/24/24 06:09			Analyzed: 05/24/24 20:04						
<u>NWTPH-HCID</u>												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
Diesel Range Organics	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Oil Range Organics	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 100 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>68 %</i>		<i>10-120 %</i>		<i>"</i>						

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: 0053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24F0059 - EPA 3546 w/SG+Acid (NWTPH)						Soil						
Blank (24F0059-BLK1)						Prepared: 06/04/24 07:20 Analyzed: 06/04/24 18:28						
<u>NWTPH-Dx/SG</u>												
Diesel	ND	---	20.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	40.0	mg/kg wet	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS (24F0059-BS1)						Prepared: 06/04/24 07:20 Analyzed: 06/04/24 18:48						
<u>NWTPH-Dx/SG</u>												
Diesel	117	---	20.0	mg/kg wet	1	125	---	94	38-132%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 109 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (24F0059-DUP1)						Prepared: 06/04/24 07:20 Analyzed: 06/04/24 19:29						
<u>QC Source Sample: WS-SB-6-5.0-8.5 (A4E1513-02)</u>												
<u>NWTPH-Dx/SG</u>												
Diesel	ND	---	23.8	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	75.1	---	47.5	mg/kg dry	1	---	90.4	---	---	19	30%	F-03
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 102 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24F0510 - EPA 3546						Soil						
Blank (24F0510-BLK1)			Prepared: 06/14/24 10:03 Analyzed: 06/14/24 19:53						C-07			
<u>EPA 8082A</u>												
Aroclor 1016	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 90 %</i>		<i>Limits: 60-125 %</i>		<i>Dilution: 1x</i>						
LCS (24F0510-BS1)			Prepared: 06/14/24 10:03 Analyzed: 06/14/24 20:11						C-07			
<u>EPA 8082A</u>												
Aroclor 1016	178	---	10.0	ug/kg wet	1	250	---	71	47-134%	---	---	
Aroclor 1260	186	---	10.0	ug/kg wet	1	250	---	74	53-140%	---	---	
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 60-125 %</i>		<i>Dilution: 1x</i>						
Duplicate (24F0510-DUP1)			Prepared: 06/14/24 10:03 Analyzed: 06/14/24 21:04						C-07			
<u>QC Source Sample: WS-SB-9-0.0-3.5 (A4E1513-07)</u>												
<u>EPA 8082A</u>												
Aroclor 1016	ND	---	12.2	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	12.2	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	12.2	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	12.2	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	12.2	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1254	ND	---	12.2	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1260	ND	---	12.2	ug/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 61 %</i>		<i>Limits: 60-125 %</i>		<i>Dilution: 1x</i>						
Matrix Spike (24F0510-MS1)			Prepared: 06/14/24 10:03 Analyzed: 06/15/24 01:47						C-07			
<u>QC Source Sample: Non-SDG (A4F1175-01)</u>												
<u>EPA 8082A</u>												
Aroclor 1016	170	---	10.0	ug/kg dry	1	250	ND	68	47-134%	---	---	
Aroclor 1260	186	---	10.0	ug/kg dry	1	250	ND	74	53-140%	---	---	

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Apex Laboratories, LLC

6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 24F0510 - EPA 3546						Soil							
Matrix Spike (24F0510-MS1)			Prepared: 06/14/24 10:03 Analyzed: 06/15/24 01:47						C-07				
QC Source Sample: Non-SDG (A4F1175-01)													
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 89 %</i>		<i>Limits: 60-125 %</i>		<i>Dilution: 1x</i>							

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---	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0825 - EPA 3546						Soil						
Blank (24E0825-BLK1)			Prepared: 05/23/24 06:24 Analyzed: 05/23/24 11:29									
<u>EPA 8270E</u>												
Acenaphthene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Acenaphthylene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Anthracene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Benz(a)anthracene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Benzo(a)pyrene	ND	---	4.00	ug/kg wet	1	---	---	---	---	---	---	---
Benzo(b)fluoranthene	ND	---	4.00	ug/kg wet	1	---	---	---	---	---	---	---
Benzo(k)fluoranthene	ND	---	4.00	ug/kg wet	1	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Chrysene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Dibenz(a,h)anthracene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Fluoranthene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Fluorene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
1-Methylnaphthalene	ND	---	5.33	ug/kg wet	1	---	---	---	---	---	---	---
2-Methylnaphthalene	ND	---	5.33	ug/kg wet	1	---	---	---	---	---	---	---
Naphthalene	ND	---	5.33	ug/kg wet	1	---	---	---	---	---	---	---
Phenanthrene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Pyrene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Carbazole	ND	---	4.00	ug/kg wet	1	---	---	---	---	---	---	---
Dibenzofuran	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Pentachlorophenol (PCP)	ND	---	26.7	ug/kg wet	1	---	---	---	---	---	---	---
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>95 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>92 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>114 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>92 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>85 %</i>		<i>39-132 %</i>		<i>"</i>						

LCS (24E0825-BS1)			Prepared: 05/23/24 06:24 Analyzed: 05/23/24 12:03									
<u>EPA 8270E</u>												
Acenaphthene	541	---	10.7	ug/kg wet	4	533	---	101	40-123%	---	---	---
Acenaphthylene	577	---	10.7	ug/kg wet	4	533	---	108	32-132%	---	---	---
Anthracene	554	---	10.7	ug/kg wet	4	533	---	104	47-123%	---	---	---

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0825 - EPA 3546						Soil						
LCS (24E0825-BS1)			Prepared: 05/23/24 06:24			Analyzed: 05/23/24 12:03						
Benz(a)anthracene	549	---	10.7	ug/kg wet	4	533	---	103	49-126%	---	---	
Benzo(a)pyrene	561	---	16.0	ug/kg wet	4	533	---	105	45-129%	---	---	
Benzo(b)fluoranthene	560	---	16.0	ug/kg wet	4	533	---	105	45-132%	---	---	
Benzo(k)fluoranthene	550	---	16.0	ug/kg wet	4	533	---	103	47-132%	---	---	
Benzo(g,h,i)perylene	527	---	10.7	ug/kg wet	4	533	---	99	43-134%	---	---	
Chrysene	525	---	10.7	ug/kg wet	4	533	---	98	50-124%	---	---	
Dibenz(a,h)anthracene	527	---	10.7	ug/kg wet	4	533	---	99	45-134%	---	---	
Fluoranthene	493	---	10.7	ug/kg wet	4	533	---	92	50-127%	---	---	
Fluorene	581	---	10.7	ug/kg wet	4	533	---	109	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	518	---	10.7	ug/kg wet	4	533	---	97	45-133%	---	---	
1-Methylnaphthalene	523	---	21.3	ug/kg wet	4	533	---	98	40-120%	---	---	
2-Methylnaphthalene	514	---	21.3	ug/kg wet	4	533	---	96	38-122%	---	---	
Naphthalene	525	---	21.3	ug/kg wet	4	533	---	99	35-123%	---	---	
Phenanthrene	536	---	10.7	ug/kg wet	4	533	---	101	50-121%	---	---	
Pyrene	500	---	10.7	ug/kg wet	4	533	---	94	47-127%	---	---	
Carbazole	505	---	16.0	ug/kg wet	4	533	---	95	50-123%	---	---	
Dibenzofuran	550	---	10.7	ug/kg wet	4	533	---	103	44-120%	---	---	
Pentachlorophenol (PCP)	425	---	107	ug/kg wet	4	533	---	80	25-133%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 100 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 4x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>97 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>99 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>104 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>93 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>106 %</i>		<i>39-132 %</i>		<i>"</i>						

Duplicate (24E0825-DUP1) Prepared: 05/23/24 06:24 Analyzed: 05/23/24 16:03

QC Source Sample: WS-SB-6-0-0-3.0 (A4E1513-01RE2)

EPA 8270E												
Acenaphthene	ND	---	3.36	ug/kg dry	1	---	ND	---	---	---	30%	
Acenaphthylene	ND	---	3.36	ug/kg dry	1	---	ND	---	---	---	30%	
Anthracene	ND	---	3.36	ug/kg dry	1	---	ND	---	---	---	30%	
Benz(a)anthracene	6.42	---	3.36	ug/kg dry	1	---	6.04	---	---	6	30%	
Benzo(a)pyrene	19.5	---	5.04	ug/kg dry	1	---	14.4	---	---	30	30%	
Benzo(b)fluoranthene	16.1	---	5.04	ug/kg dry	1	---	12.4	---	---	26	30%	

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0825 - EPA 3546						Soil						
Duplicate (24E0825-DUP1)			Prepared: 05/23/24 06:24 Analyzed: 05/23/24 16:03									
QC Source Sample: WS-SB-6-0.0-3.0 (A4E1513-01RE2)												
Benzo(k)fluoranthene	6.50	---	5.04	ug/kg dry	1	---	5.74	---	---	12	30%	M-05
Benzo(g,h,i)perylene	12.6	---	3.36	ug/kg dry	1	---	8.72	---	---	37	30%	Q-05
Chrysene	8.83	---	3.36	ug/kg dry	1	---	8.52	---	---	4	30%	
Dibenz(a,h)anthracene	ND	---	3.36	ug/kg dry	1	---	ND	---	---	---	30%	
Fluoranthene	12.6	---	3.36	ug/kg dry	1	---	15.0	---	---	17	30%	
Fluorene	ND	---	3.36	ug/kg dry	1	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	11.0	---	3.36	ug/kg dry	1	---	7.35	---	---	40	30%	Q-05
1-Methylnaphthalene	ND	---	6.72	ug/kg dry	1	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	---	6.72	ug/kg dry	1	---	ND	---	---	---	30%	
Naphthalene	ND	---	6.72	ug/kg dry	1	---	ND	---	---	---	30%	
Phenanthrene	9.48	---	3.36	ug/kg dry	1	---	9.20	---	---	3	30%	
Pyrene	16.4	---	3.36	ug/kg dry	1	---	20.0	---	---	20	30%	
Carbazole	ND	---	5.04	ug/kg dry	1	---	ND	---	---	---	30%	
Dibenzofuran	ND	---	3.36	ug/kg dry	1	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	---	33.6	ug/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 96 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>87 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>98 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>105 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>88 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>94 %</i>		<i>39-132 %</i>		<i>"</i>						

Matrix Spike (24E0825-MS1) Prepared: 05/23/24 06:24 Analyzed: 05/23/24 14:54

QC Source Sample: WS-SB-9-5.0-8.0 (A4E1513-08RE1)												
EPA 8270E												
Acenaphthene	555	---	12.1	ug/kg dry	4	602	ND	92	40-123%	---	---	
Acenaphthylene	605	---	12.1	ug/kg dry	4	602	10.6	99	32-132%	---	---	
Anthracene	577	---	12.1	ug/kg dry	4	602	ND	96	47-123%	---	---	
Benz(a)anthracene	570	---	12.1	ug/kg dry	4	602	21.2	91	49-126%	---	---	
Benzo(a)pyrene	620	---	18.1	ug/kg dry	4	602	60.3	93	45-129%	---	---	
Benzo(b)fluoranthene	640	---	18.1	ug/kg dry	4	602	52.3	98	45-132%	---	---	
Benzo(k)fluoranthene	575	---	18.1	ug/kg dry	4	602	20.4	92	47-132%	---	---	
Benzo(g,h,i)perylene	474	---	12.1	ug/kg dry	4	602	46.3	71	43-134%	---	---	

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0825 - EPA 3546						Soil						
Matrix Spike (24E0825-MS1)			Prepared: 05/23/24 06:24 Analyzed: 05/23/24 14:54									
QC Source Sample: WS-SB-9-5.0-8.0 (A4E1513-08RE1)												
Chrysene	559	---	12.1	ug/kg dry	4	602	31.8	88	50-124%	---	---	
Dibenz(a,h)anthracene	509	---	12.1	ug/kg dry	4	602	ND	84	45-134%	---	---	
Fluoranthene	607	---	12.1	ug/kg dry	4	602	55.7	92	50-127%	---	---	
Fluorene	587	---	12.1	ug/kg dry	4	602	ND	97	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	505	---	12.1	ug/kg dry	4	602	35.2	78	45-133%	---	---	
1-Methylnaphthalene	558	---	24.1	ug/kg dry	4	602	ND	93	40-120%	---	---	
2-Methylnaphthalene	562	---	24.1	ug/kg dry	4	602	ND	93	38-122%	---	---	
Naphthalene	566	---	24.1	ug/kg dry	4	602	34.6	88	35-123%	---	---	
Phenanthrene	596	---	12.1	ug/kg dry	4	602	39.3	92	50-121%	---	---	
Pyrene	598	---	12.1	ug/kg dry	4	602	73.9	87	47-127%	---	---	
Carbazole	549	---	18.1	ug/kg dry	4	602	ND	91	50-123%	---	---	
Dibenzofuran	563	---	12.1	ug/kg dry	4	602	ND	93	44-120%	---	---	
Pentachlorophenol (PCP)	578	---	121	ug/kg dry	4	602	ND	96	25-133%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr) Recovery: 97 % Limits: 37-122 % Dilution: 4x</i>												
<i>2-Fluorobiphenyl (Surr) 87 % 44-120 % "</i>												
<i>Phenol-d6 (Surr) 96 % 33-122 % "</i>												
<i>p-Terphenyl-d14 (Surr) 104 % 54-127 % "</i>												
<i>2-Fluorophenol (Surr) 87 % 35-120 % "</i>												
<i>2,4,6-Tribromophenol (Surr) 102 % 39-132 % "</i>												

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---	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0858 - EPA 3510C (Acid Extraction)						Water						
Blank (24E0858-BLK1)			Prepared: 05/23/24 15:00			Analyzed: 05/24/24 12:34						
EPA 8270E												
Acenaphthene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Chrysene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Fluoranthene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Fluorene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	
Phenanthrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Pyrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Carbazole	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 83 %</i>		<i>Limits: 44-120 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>72 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>32 %</i>		<i>10-133 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>87 %</i>		<i>50-134 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>42 %</i>		<i>19-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>77 %</i>		<i>43-140 %</i>		<i>"</i>						

LCS (24E0858-BS1)			Prepared: 05/23/24 15:00			Analyzed: 05/24/24 13:10						
EPA 8270E												
Acenaphthene	3.05	---	0.0800	ug/L	4	4.00	---	76	47-122%	---	---	
Acenaphthylene	3.35	---	0.0800	ug/L	4	4.00	---	84	41-130%	---	---	

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ANALYTICAL REPORT

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0858 - EPA 3510C (Acid Extraction)						Water						
LCS (24E0858-BS1)			Prepared: 05/23/24 15:00			Analyzed: 05/24/24 13:10						
Anthracene	3.52	---	0.0800	ug/L	4	4.00	---	88	57-123%	---	---	
Benz(a)anthracene	3.47	---	0.0800	ug/L	4	4.00	---	87	58-125%	---	---	
Benzo(a)pyrene	3.88	---	0.120	ug/L	4	4.00	---	97	54-128%	---	---	
Benzo(b)fluoranthene	3.60	---	0.120	ug/L	4	4.00	---	90	53-131%	---	---	
Benzo(k)fluoranthene	3.74	---	0.120	ug/L	4	4.00	---	94	57-129%	---	---	
Benzo(g,h,i)perylene	3.59	---	0.0800	ug/L	4	4.00	---	90	50-134%	---	---	
Chrysene	3.70	---	0.0800	ug/L	4	4.00	---	92	59-123%	---	---	
Dibenz(a,h)anthracene	3.55	---	0.0800	ug/L	4	4.00	---	89	51-134%	---	---	
Fluoranthene	3.67	---	0.0800	ug/L	4	4.00	---	92	57-128%	---	---	
Fluorene	3.37	---	0.0800	ug/L	4	4.00	---	84	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	3.48	---	0.0800	ug/L	4	4.00	---	87	52-134%	---	---	
1-Methylnaphthalene	2.75	---	0.160	ug/L	4	4.00	---	69	41-120%	---	---	
2-Methylnaphthalene	2.80	---	0.160	ug/L	4	4.00	---	70	40-121%	---	---	
Naphthalene	2.63	---	0.160	ug/L	4	4.00	---	66	40-121%	---	---	
Phenanthrene	3.46	---	0.0800	ug/L	4	4.00	---	86	59-120%	---	---	
Pyrene	3.71	---	0.0800	ug/L	4	4.00	---	93	57-126%	---	---	
Carbazole	4.13	---	0.120	ug/L	4	4.00	---	103	60-122%	---	---	
Dibenzofuran	3.28	---	0.0800	ug/L	4	4.00	---	82	53-120%	---	---	
Pentachlorophenol (PCP)	3.72	---	0.800	ug/L	4	4.00	---	93	35-138%	---	---	
Bis(2-ethylhexyl)phthalate	3.57	---	1.60	ug/L	4	4.00	---	89	55-135%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr) Recovery: 86 % Limits: 44-120 % Dilution: 4x</i>												
<i>2-Fluorobiphenyl (Surr) 71 % 44-120 % "</i>												
<i>Phenol-d6 (Surr) 30 % 10-133 % "</i>												
<i>p-Terphenyl-d14 (Surr) 84 % 50-134 % "</i>												
<i>2-Fluorophenol (Surr) 39 % 19-120 % "</i>												
<i>2,4,6-Tribromophenol (Surr) 98 % 43-140 % "</i>												

LCS Dup (24E0858-BSD1)			Prepared: 05/23/24 15:00			Analyzed: 05/24/24 13:46							Q-19
EPA 8270E													
Acenaphthene	2.89	---	0.0800	ug/L	4	4.00	---	72	47-122%	5	30%		
Acenaphthylene	3.12	---	0.0800	ug/L	4	4.00	---	78	41-130%	7	30%		
Anthracene	3.27	---	0.0800	ug/L	4	4.00	---	82	57-123%	7	30%		
Benz(a)anthracene	3.29	---	0.0800	ug/L	4	4.00	---	82	58-125%	5	30%		
Benzo(a)pyrene	3.72	---	0.120	ug/L	4	4.00	---	93	54-128%	4	30%		

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E1141 - EPA 3015A												
Water												
Blank (24E1141-BLK1)			Prepared: 05/31/24 10:23 Analyzed: 05/31/24 22:17									
EPA 6020B												
Barium	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Mercury	ND	---	0.0800	ug/L	1	---	---	---	---	---	---	
Blank (24E1141-BLK3)			Prepared: 05/31/24 10:23 Analyzed: 06/03/24 12:45									
EPA 6020B												
Arsenic	ND	---	1.00	ug/L	1	---	---	---	---	---	---	Q-16
Cadmium	ND	---	0.200	ug/L	1	---	---	---	---	---	---	Q-16
Chromium	ND	---	2.00	ug/L	1	---	---	---	---	---	---	Q-16
Selenium	ND	---	1.00	ug/L	1	---	---	---	---	---	---	Q-16
Silver	ND	---	0.200	ug/L	1	---	---	---	---	---	---	Q-16
LCS (24E1141-BS1)			Prepared: 05/31/24 10:23 Analyzed: 05/31/24 22:22									
EPA 6020B												
Barium	57.9	---	2.00	ug/L	1	55.6	---	104	80-120%	---	---	
Lead	60.2	---	0.200	ug/L	1	55.6	---	108	80-120%	---	---	
Mercury	1.14	---	0.0800	ug/L	1	1.11	---	103	80-120%	---	---	
LCS (24E1141-BS3)			Prepared: 05/31/24 10:23 Analyzed: 06/03/24 12:51									
EPA 6020B												
Arsenic	57.1	---	1.00	ug/L	1	55.6	---	103	80-120%	---	---	Q-16
Cadmium	57.2	---	0.200	ug/L	1	55.6	---	103	80-120%	---	---	Q-16
Chromium	57.7	---	2.00	ug/L	1	55.6	---	104	80-120%	---	---	Q-16
Selenium	30.0	---	1.00	ug/L	1	27.8	---	108	80-120%	---	---	Q-16
Silver	30.4	---	0.200	ug/L	1	27.8	---	110	80-120%	---	---	Q-16
Duplicate (24E1141-DUP1)			Prepared: 05/31/24 10:23 Analyzed: 05/31/24 22:45									
QC Source Sample: Non-SDG (A4E1473-01)												
Barium	51.9	---	2.00	ug/L	1	---	46.7	---	---	11	20%	
Lead	4.94	---	0.200	ug/L	1	---	4.83	---	---	2	20%	
Mercury	ND	---	0.0800	ug/L	1	---	ND	---	---	---	20%	

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E1141 - EPA 3015A												
Water												
Duplicate (24E1141-DUP4) Prepared: 05/31/24 10:23 Analyzed: 06/03/24 13:02												
QC Source Sample: Non-SDG (A4E1473-01RE2)												
Arsenic	1.26	---	1.00	ug/L	1	---	1.20	---	---	4	20%	Q-16
Cadmium	ND	---	0.200	ug/L	1	---	0.198	---	---	***	20%	Q-16
Chromium	3.93	---	2.00	ug/L	1	---	3.59	---	---	9	20%	Q-16
Selenium	ND	---	1.00	ug/L	1	---	0.645	---	---	***	20%	Q-16
Silver	ND	---	0.200	ug/L	1	---	ND	---	---	---	20%	Q-16
Matrix Spike (24E1141-MS1) Prepared: 05/31/24 10:23 Analyzed: 05/31/24 22:56												
QC Source Sample: Non-SDG (A4E1503-01)												
EPA 6020B												
Barium	114	---	2.00	ug/L	1	55.6	56.6	103	75-125%	---	---	
Lead	59.9	---	0.200	ug/L	1	55.6	1.08	106	75-125%	---	---	
Mercury	1.25	---	0.0800	ug/L	1	1.11	0.136	100	75-125%	---	---	
Matrix Spike (24E1141-MS2) Prepared: 05/31/24 10:23 Analyzed: 05/31/24 23:07												
QC Source Sample: Non-SDG (A4E1503-02)												
EPA 6020B												
Barium	91.2	---	2.00	ug/L	1	55.6	32.9	105	75-125%	---	---	
Lead	60.8	---	0.200	ug/L	1	55.6	1.54	107	75-125%	---	---	
Mercury	1.16	---	0.0800	ug/L	1	1.11	ND	105	75-125%	---	---	
Matrix Spike (24E1141-MS5) Prepared: 05/31/24 10:23 Analyzed: 06/03/24 13:13												
QC Source Sample: Non-SDG (A4E1503-01RE1)												
EPA 6020B												
Arsenic	65.1	---	1.00	ug/L	1	55.6	8.01	103	75-125%	---	---	Q-16
Cadmium	58.2	---	0.200	ug/L	1	55.6	ND	105	75-125%	---	---	Q-16
Chromium	57.3	---	2.00	ug/L	1	55.6	ND	103	75-125%	---	---	Q-16
Selenium	29.8	---	1.00	ug/L	1	27.8	ND	107	75-125%	---	---	Q-16
Silver	30.5	---	0.200	ug/L	1	27.8	ND	110	75-125%	---	---	Q-16
Matrix Spike (24E1141-MS6) Prepared: 05/31/24 10:23 Analyzed: 06/03/24 13:25												
QC Source Sample: Non-SDG (A4E1503-02RE1)												

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ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E1141 - EPA 3015A						Water						
Matrix Spike (24E1141-MS6)						Prepared: 05/31/24 10:23 Analyzed: 06/03/24 13:25						
QC Source Sample: Non-SDG (A4E1503-02RE1)												
EPA 6020B												
Arsenic	72.2	---	1.00	ug/L	1	55.6	15.1	103	75-125%	---	---	Q-16
Cadmium	58.5	---	0.200	ug/L	1	55.6	ND	105	75-125%	---	---	Q-16
Chromium	58.1	---	2.00	ug/L	1	55.6	ND	105	75-125%	---	---	Q-16
Selenium	30.6	---	1.00	ug/L	1	27.8	ND	110	75-125%	---	---	Q-16
Silver	30.2	---	0.200	ug/L	1	27.8	ND	109	75-125%	---	---	Q-16

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Darrell Auvil, Client Services Manager



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ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0838 - Total Solids (Dry Weight) - 2022						Soil						
Duplicate (24E0838-DUP1)			Prepared: 05/23/24 08:53 Analyzed: 05/24/24 07:37									
<u>QC Source Sample: Non-SDG (A4E1502-01)</u>												
% Solids	72.9	---	1.00	%	1	---	70.7	---	---	3	10%	
Duplicate (24E0838-DUP2)			Prepared: 05/23/24 08:53 Analyzed: 05/24/24 07:37									
<u>QC Source Sample: Non-SDG (A4E1502-02)</u>												
% Solids	66.0	---	1.00	%	1	---	68.1	---	---	3	10%	
Duplicate (24E0838-DUP3)			Prepared: 05/23/24 08:53 Analyzed: 05/24/24 07:37									
<u>QC Source Sample: Non-SDG (A4E1502-03)</u>												
% Solids	85.6	---	1.00	%	1	---	75.5	---	---	12	10%	
Duplicate (24E0838-DUP4)			Prepared: 05/23/24 08:53 Analyzed: 05/24/24 07:37									
<u>QC Source Sample: Non-SDG (A4E1502-04)</u>												
% Solids	71.1	---	1.00	%	1	---	70.6	---	---	0.7	10%	
Duplicate (24E0838-DUP5)			Prepared: 05/23/24 08:53 Analyzed: 05/24/24 07:37									
<u>QC Source Sample: Non-SDG (A4E1502-05)</u>												
% Solids	73.1	---	1.00	%	1	---	72.7	---	---	0.6	10%	
Duplicate (24E0838-DUP6)			Prepared: 05/23/24 08:53 Analyzed: 05/24/24 07:37									
<u>QC Source Sample: Non-SDG (A4E1510-06)</u>												
% Solids	49.5	---	1.00	%	1	---	70.0	---	---	34	10%	
Duplicate (24E0838-DUP7)			Prepared: 05/23/24 08:53 Analyzed: 05/24/24 07:37									
<u>QC Source Sample: Non-SDG (A4E1502-07)</u>												
% Solids	63.4	---	1.00	%	1	---	61.1	---	---	4	10%	
Duplicate (24E0838-DUP8)			Prepared: 05/23/24 20:11 Analyzed: 05/24/24 07:37									
<u>QC Source Sample: Non-SDG (A4E1563-01)</u>												
% Solids	76.6	---	1.00	%	1	---	76.4	---	---	0.3	10%	

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
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No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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Darrell Auvil, Client Services Manager



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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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SAMPLE PREPARATION INFORMATION

Hydrocarbon Identification Screen by NWTPH-HCID

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24E0882</u>							
A4E1513-09	Water	NWTPH-HCID	05/21/24 14:00	05/24/24 06:09	930mL/5mL	1000mL/5mL	1.08
A4E1513-10	Water	NWTPH-HCID	05/21/24 11:20	05/24/24 06:09	1050mL/5mL	1000mL/5mL	0.95
A4E1513-11	Water	NWTPH-HCID	05/21/24 12:00	05/24/24 06:09	980mL/5mL	1000mL/5mL	1.02

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24E0827</u>							
A4E1513-01	Soil	NWTPH-HCID	05/21/24 14:00	05/23/24 06:30	10.1g/10mL	10g/10mL	0.99
A4E1513-02	Soil	NWTPH-HCID	05/21/24 14:30	05/23/24 06:30	10.6g/10mL	10g/10mL	0.94
A4E1513-03	Soil	NWTPH-HCID	05/21/24 12:35	05/23/24 06:30	10.65g/10mL	10g/10mL	0.94
A4E1513-04	Soil	NWTPH-HCID	05/21/24 12:45	05/23/24 06:30	10.17g/10mL	10g/10mL	0.98
A4E1513-05	Soil	NWTPH-HCID	05/21/24 10:00	05/23/24 06:30	10.41g/10mL	10g/10mL	0.96
A4E1513-06	Soil	NWTPH-HCID	05/21/24 10:05	05/23/24 06:30	10.94g/10mL	10g/10mL	0.91
A4E1513-07	Soil	NWTPH-HCID	05/21/24 11:05	05/23/24 06:30	10.83g/10mL	10g/10mL	0.92
A4E1513-08	Soil	NWTPH-HCID	05/21/24 11:15	05/23/24 06:30	10.88g/10mL	10g/10mL	0.92

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Prep: EPA 3546 w/SG+Acid (NWTPH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24F0059</u>							
A4E1513-02	Soil	NWTPH-Dx/SG	05/21/24 14:30	06/04/24 07:20	11.21g/5mL	10g/5mL	0.89
A4E1513-07	Soil	NWTPH-Dx/SG	05/21/24 11:05	06/04/24 07:20	11.26g/5mL	10g/5mL	0.89

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24F0510</u>							
A4E1513-07	Soil	EPA 8082A	05/21/24 11:05	06/14/24 10:03	11.29g/5mL	10g/5mL	0.89

Selected Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3510C (Acid Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24E0858</u>							

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ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Table with project details: Terraphase Engineering, Project: Highway 101 Former Mill Site, Project Number: O053.009.003, Project Manager: James Farrow, Report ID: A4E1513 - 06 19 24 1546

SAMPLE PREPARATION INFORMATION

Selected Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3510C (Acid Extraction)

Table with 8 columns: Lab Number, Matrix, Method, Sampled, Prepared, Sample Initial/Final, Default Initial/Final, RL Prep Factor. Rows include A4E1513-09, A4E1513-10, A4E1513-11.

Prep: EPA 3546

Table with 8 columns: Lab Number, Matrix, Method, Sampled, Prepared, Sample Initial/Final, Default Initial/Final, RL Prep Factor. Rows include A4E1513-01RE2 through A4E1513-08RE1.

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3015A

Table with 8 columns: Lab Number, Matrix, Method, Sampled, Prepared, Sample Initial/Final, Default Initial/Final, RL Prep Factor. Rows include A4E1513-09 through A4E1513-11RE1.

Percent Dry Weight

Prep: Total Solids (Dry Weight) - 2022

Table with 8 columns: Lab Number, Matrix, Method, Sampled, Prepared, Sample Initial/Final, Default Initial/Final, RL Prep Factor. Rows include A4E1513-01 through A4E1513-04.

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Signature of Darrell Auvil

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight) - 2022

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A4E1513-05	Soil	EPA 8000D	05/21/24 10:00	05/23/24 08:53			NA
A4E1513-06	Soil	EPA 8000D	05/21/24 10:05	05/23/24 08:53			NA
A4E1513-07	Soil	EPA 8000D	05/21/24 11:05	05/23/24 08:53			NA
A4E1513-08	Soil	EPA 8000D	05/21/24 11:15	05/23/24 08:53			NA

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Terraphase Engineering
610 SW Broadway #406
Portland, OR 97205

Project: **Highway 101 Former Mill Site**
Project Number: **O053.009.003**
Project Manager: **James Farrow**

Report ID:
A4E1513 - 06 19 24 1546

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

- A-01** See DUP1 for passing surrogate and confirmation of no 1221
- C-07** Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
- F-03** The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
- M-05** Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
- Q-05** Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
- Q-16** Reanalysis of an original Batch QC sample.
- Q-19** Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
- R-02** The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
- S-06** Surrogate recovery is outside of established control limits.

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

- DET Analyte DETECTED at or above the detection or reporting limit.
- ND Analyte NOT DETECTED at or above the detection or reporting limit.
- NR Result Not Reported
- RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

- Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.
 - "dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
 - "wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
 - " " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.
- Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

- " --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- " *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to one half of the Reporting Limit (RL). Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.

- For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
- For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

- Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) -
EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
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All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation. Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

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ORELAP ID: OR100062

Terraphase Engineering
610 SW Broadway #406
Portland, OR 97205

Project: **Highway 101 Former Mill Site**
Project Number: **O053.009.003**
Project Manager: **James Farrow**

Report ID:
A4E1513 - 06 19 24 1546

CHAIN OF CUSTODY

APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

Lab # **A4E1513** COC **Z** of **Z**

Company: **Terraphase Engineering** Project Mgr: **James Farrow** Project Name: **Highway 101 Former Mill Site** Project #: **O053.009.003**

Address: **610 SW Broadway Ste 406, Portland, OR 97205** Phone: **503-897-1067** Email: **James.Farrow@terrphase.com** W-11-2

Sampled by: **Adrienne Vigneres** Date: **5/21/14**

Site Location: **Adrienne Vigneres - Day 101 Former Mill Site**

State: **Oregon** County: **TILLAMOOK**

DATE	TIME	MATRIX	# OF CONTAINERS	NWTR-HCID	NWTR-GI	NWTR-PA	8260 BTEX	8260 HDM VOCS	8260 HALO VOCS	8260 VOCS Full List	8270 SEMI-VOCS Full List	8052 PCBs	8051 Pesticides	RCRA Metals (8)	Priority Metals (13)	AL, Sb, As, Ba, Be, Bi, Cd, Cr, Cu, Fe, Hg, K, Mn, Mo, Ni, Pb, Se, Ag, Na, Ti, V, Zn	TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive	
5/21/14	00:00:00	WWS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SPECIAL INSTRUCTIONS:

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): **2 Day** 1 Day 3 Day 5 Day Other: _____

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:
Signature: Adrienne Vigneres Date: 5/21/14	Signature: Sharon Date: 5/22/14
Printed Name: Adrienne Vigneres Time: 1800	Printed Name: Kathleen Time: 11:04
Company: Terraphase	Company: Apex

Form V-002 R-00

Apex Laboratories

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: 0053.009.003 Project Manager: James Farrow	Report ID: A4E1513 - 06 19 24 1546
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APEX LABS COOLER RECEIPT FORM

Client: Terraphase Engineering, Inc. Element WO#: A4E1513 ^{E1513} _{FILE FOR ANALYSIS 5/23/24}

Project/Project #: Highway 101 Former Mill Site 10053.009.003

Delivery Info:
Date/time received: 5/22/24 @ 11:04 By: JAM
Delivered by: Apex Client ESS FedEx UPS Radio Morgan SDS Evergreen Other
From USDA Regulated Origin? Yes No

Cooler Inspection Date/time inspected: 5/22/24 @ 11:15 By: JAM
Chain of Custody included? Yes No
Signed/dated by client? Yes No
Contains USDA Reg. Soils? Yes No Unsure (email RegSoils)

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7	Cooler #8
Temperature (°C)	5.6	5.8	1.4	5.9	4.8	2.2	2.4	2.0
Custody seals? (Y/N)	Y							Y
Received on ice? (Y/N)	Y							Y
Temp. blanks? (Y/N)	Y							Y
Ice type: (Gel/Real/Other)	Real							Real
Condition (In/Out):	In							In

Cooler out of temp? (Y/N) Possible reason why: _____
Green dots applied to out of temperature samples? Yes/No
Out of temperature samples form initiated? Yes/No

Sample Inspection: Date/time inspected: 5/22/24 @ 19:41 By: JAM
All samples intact? Yes No Comments: _____

Bottle labels/COCs agree? Yes No Comments: 1/2 MeOH VOA's for WS-SB-7-50-75 reads time qs 11:45

COC/container discrepancies form initiated? Yes No
Containers/volumes received appropriate for analysis? Yes No Comments: _____

Do VOA vials have visible headspace? Yes No NA
Comments: _____

Water samples: pH checked: Yes No NA pII appropriate? Yes No NA pH ID: AB3117
Comments: _____

Labeled by: JAM Witness: AFW Cooler Inspected by: JAM Form Y-003 R-02

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Wednesday, June 19, 2024

James Farrow
Terraphase Engineering
610 SW Broadway #406
Portland, OR 97205

RE: A4E1574 - Highway 101 Former Mill Site - O053.009.003

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4E1574, which was received by the laboratory on 5/24/2024 at 10:31:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information			
<u>Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.</u>			
(See Cooler Receipt Form for details)			
Cooler #1	1.6	degC	
Cooler #3	5.3	degC	
Cooler #5	0.4	degC	
			Cooler #2 2.9 degC
			Cooler #4 0.9 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



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503-718-2323
ORELAP ID: OR100062

<u>Terraphase Engineering</u> 610 SW Broadway #406 Portland, OR 97205	Project: <u>Highway 101 Former Mill Site</u> Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WS-SB-6-GW-10-15	A4E1574-01	Water	05/21/24 16:30	05/24/24 10:31
WS-SB-1-GW-5-15	A4E1574-02	Water	05/22/24 18:55	05/24/24 10:31
WS-SB-3-GW-10-20	A4E1574-03	Water	05/22/24 14:25	05/24/24 10:31
WS-SB-3-GW-10-20-DUP	A4E1574-04	Water	05/22/24 14:30	05/24/24 10:31
WS-SB-EB-20240521	A4E1574-05	Water	05/21/24 17:30	05/24/24 10:31
WS-SB-EB-20240522	A4E1574-06	Water	05/22/24 17:45	05/24/24 10:31
WS-RS-EB-20240522	A4E1574-07	Water	05/22/24 17:30	05/24/24 10:31
WS-SB-2-0.0-5.0	A4E1574-08	Soil	05/21/24 15:50	05/24/24 10:31
WS-SB-2-5.0-7.0	A4E1574-09	Soil	05/21/24 15:55	05/24/24 10:31
WS-SB-4-0.0-5.0	A4E1574-10	Soil	05/21/24 16:50	05/24/24 10:31
WS-SB-4-5.0-9.0	A4E1574-11	Soil	05/21/24 16:55	05/24/24 10:31
WS-SB-1-0.0-3.0	A4E1574-12	Soil	05/22/24 15:12	05/24/24 10:31
WS-SB-1-0.0-3.0-DUP	A4E1574-13	Soil	05/22/24 15:25	05/24/24 10:31
WS-SB-1-5.0-8.0	A4E1574-14	Soil	05/22/24 15:20	05/24/24 10:31
WS-SB-3-0.0-5.0	A4E1574-15	Soil	05/22/24 12:23	05/24/24 10:31
WS-SB-3-5.0-8.0	A4E1574-16	Soil	05/22/24 12:44	05/24/24 10:31
WS-SB-5-0.0-5.0	A4E1574-17	Soil	05/22/24 13:35	05/24/24 10:31
WS-SB-5-5.0-8.5	A4E1574-18	Soil	05/22/24 13:40	05/24/24 10:31
WS-SB-10-0.0-3.0	A4E1574-19	Soil	05/22/24 16:40	05/24/24 10:31
WS-SB-10-5.0-10.0	A4E1574-20	Soil	05/22/24 16:45	05/24/24 10:31
WS-RS-1-0-1	A4E1574-21	Soil	05/22/24 09:45	05/24/24 10:31
WS-RS-1-2-3	A4E1574-22	Soil	05/22/24 10:00	05/24/24 10:31
WS-RS-2-0-1	A4E1574-23	Soil	05/22/24 10:15	05/24/24 10:31
WS-RS-2-0-1-DUP	A4E1574-24	Soil	05/22/24 10:20	05/24/24 10:31
WS-RS-2-2-3	A4E1574-25	Soil	05/22/24 10:30	05/24/24 10:31
WS-RS-3-0-1	A4E1574-26	Soil	05/22/24 11:00	05/24/24 10:31
WS-RS-3-2-3	A4E1574-27	Soil	05/22/24 11:10	05/24/24 10:31
WS-IMS-0-0.5	A4E1574-28	Soil	05/22/24 17:50	05/24/24 10:31
WS-IMS-0-0.5	A4E1574-29	Soil	05/22/24 17:50	05/24/24 10:31
WS-IMS-0-0.5-DUP	A4E1574-30	Soil	05/23/24 09:45	05/24/24 10:31
WS-IMS-0-0.5-DUP	A4E1574-31	Soil	05/23/24 09:45	05/24/24 10:31
WS-IMS-0-0.5-TRP	A4E1574-32	Soil	05/23/24 11:50	05/24/24 10:31
WS-IMS-0-0.5-TRP	A4E1574-33	Soil	05/23/24 11:50	05/24/24 10:31

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Darrell Auvil, Client Services Manager



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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
---	---	---

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WS-SB-5-GW-10-20	A4E1574-34	Water	05/22/24 17:07	05/24/24 10:31

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ANALYTICAL SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-6-GW-10-15 (A4E1574-01)				Matrix: Water		Batch: 24E1027		DCNT, PRES
Gasoline Range Organics	DET	---	0.114	mg/L	1	05/29/24 23:21	NWTPH-HCID	F-12
Diesel Range Organics	DET	---	0.284	mg/L	1	05/29/24 23:21	NWTPH-HCID	F-13
Oil Range Organics	ND	---	0.284	mg/L	1	05/29/24 23:21	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 91 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 23:21</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>49 %</i>		<i>10-120 %</i>		<i>1</i>	<i>05/29/24 23:21</i>	<i>NWTPH-HCID</i>
WS-SB-1-GW-5-15 (A4E1574-02)				Matrix: Water		Batch: 24E1027		DCNT
Gasoline Range Organics	ND	---	0.0962	mg/L	1	05/29/24 23:42	NWTPH-HCID	
Diesel Range Organics	ND	---	0.240	mg/L	1	05/29/24 23:42	NWTPH-HCID	
Oil Range Organics	ND	---	0.240	mg/L	1	05/29/24 23:42	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 23:42</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>41 %</i>		<i>10-120 %</i>		<i>1</i>	<i>05/29/24 23:42</i>	<i>NWTPH-HCID</i>
WS-SB-3-GW-10-20 (A4E1574-03)				Matrix: Water		Batch: 24E1027		DCNT
Gasoline Range Organics	ND	---	0.109	mg/L	1	05/30/24 00:02	NWTPH-HCID	
Diesel Range Organics	ND	---	0.272	mg/L	1	05/30/24 00:02	NWTPH-HCID	
Oil Range Organics	ND	---	0.272	mg/L	1	05/30/24 00:02	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/30/24 00:02</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>57 %</i>		<i>10-120 %</i>		<i>1</i>	<i>05/30/24 00:02</i>	<i>NWTPH-HCID</i>
WS-SB-3-GW-10-20-DUP (A4E1574-04)				Matrix: Water		Batch: 24E1027		
Gasoline Range Organics	ND	---	0.0943	mg/L	1	05/30/24 00:23	NWTPH-HCID	
Diesel Range Organics	ND	---	0.236	mg/L	1	05/30/24 00:23	NWTPH-HCID	
Oil Range Organics	ND	---	0.236	mg/L	1	05/30/24 00:23	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/30/24 00:23</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>43 %</i>		<i>10-120 %</i>		<i>1</i>	<i>05/30/24 00:23</i>	<i>NWTPH-HCID</i>
WS-SB-EB-20240521 (A4E1574-05)				Matrix: Water		Batch: 24E1027		
Gasoline Range Organics	ND	---	0.111	mg/L	1	05/30/24 01:04	NWTPH-HCID	
Diesel Range Organics	ND	---	0.278	mg/L	1	05/30/24 01:04	NWTPH-HCID	
Oil Range Organics	ND	---	0.278	mg/L	1	05/30/24 01:04	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 94 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/30/24 01:04</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>48 %</i>		<i>10-120 %</i>		<i>1</i>	<i>05/30/24 01:04</i>	<i>NWTPH-HCID</i>

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
---	---	---

ANALYTICAL SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-EB-20240522 (A4E1574-06)			Matrix: Water			Batch: 24E1027		
Gasoline Range Organics	ND	---	0.0980	mg/L	1	05/30/24 01:25	NWTPH-HCID	
Diesel Range Organics	ND	---	0.245	mg/L	1	05/30/24 01:25	NWTPH-HCID	
Oil Range Organics	ND	---	0.245	mg/L	1	05/30/24 01:25	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 91 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/30/24 01:25</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>39 %</i>		<i>10-120 %</i>		<i>1</i>	<i>05/30/24 01:25</i>	<i>NWTPH-HCID</i>
WS-RS-EB-20240522 (A4E1574-07)			Matrix: Water			Batch: 24E1027		
Gasoline Range Organics	ND	---	0.100	mg/L	1	05/30/24 01:46	NWTPH-HCID	
Diesel Range Organics	ND	---	0.250	mg/L	1	05/30/24 01:46	NWTPH-HCID	
Oil Range Organics	ND	---	0.250	mg/L	1	05/30/24 01:46	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 94 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/30/24 01:46</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>47 %</i>		<i>10-120 %</i>		<i>1</i>	<i>05/30/24 01:46</i>	<i>NWTPH-HCID</i>
WS-SB-2-0.0-5.0 (A4E1574-08)			Matrix: Soil			Batch: 24E0969		
Gasoline Range Organics	ND	---	26.5	mg/kg dry	1	05/29/24 07:18	NWTPH-HCID	
Diesel Range Organics	ND	---	66.3	mg/kg dry	1	05/29/24 07:18	NWTPH-HCID	
Oil Range Organics	ND	---	133	mg/kg dry	1	05/29/24 07:18	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 69 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 07:18</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>67 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/29/24 07:18</i>	<i>NWTPH-HCID</i>
WS-SB-2-5.0-7.0 (A4E1574-09)			Matrix: Soil			Batch: 24E0969		
Gasoline Range Organics	ND	---	28.1	mg/kg dry	1	05/29/24 07:41	NWTPH-HCID	
Diesel Range Organics	ND	---	70.4	mg/kg dry	1	05/29/24 07:41	NWTPH-HCID	
Oil Range Organics	ND	---	141	mg/kg dry	1	05/29/24 07:41	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 68 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 07:41</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>65 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/29/24 07:41</i>	<i>NWTPH-HCID</i>
WS-SB-4-0.0-5.0 (A4E1574-10)			Matrix: Soil			Batch: 24E0969		
Gasoline Range Organics	ND	---	28.3	mg/kg dry	1	05/29/24 08:05	NWTPH-HCID	
Diesel Range Organics	ND	---	70.7	mg/kg dry	1	05/29/24 08:05	NWTPH-HCID	
Oil Range Organics	ND	---	141	mg/kg dry	1	05/29/24 08:05	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 69 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 08:05</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>67 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/29/24 08:05</i>	<i>NWTPH-HCID</i>

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Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
---	---	---

ANALYTICAL SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-4-5.0-9.0 (A4E1574-11)				Matrix: Soil		Batch: 24E0969		
Gasoline Range Organics	ND	---	29.6	mg/kg dry	1	05/29/24 08:28	NWTPH-HCID	
Diesel Range Organics	ND	---	74.0	mg/kg dry	1	05/29/24 08:28	NWTPH-HCID	
Oil Range Organics	ND	---	148	mg/kg dry	1	05/29/24 08:28	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 70 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 08:28</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>67 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/29/24 08:28</i>	<i>NWTPH-HCID</i>
WS-SB-1-0.0-3.0 (A4E1574-12)				Matrix: Soil		Batch: 24E0969		
Gasoline Range Organics	ND	---	24.4	mg/kg dry	1	05/29/24 08:51	NWTPH-HCID	
Diesel Range Organics	ND	---	61.1	mg/kg dry	1	05/29/24 08:51	NWTPH-HCID	
Oil Range Organics	ND	---	122	mg/kg dry	1	05/29/24 08:51	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 67 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 08:51</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>67 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/29/24 08:51</i>	<i>NWTPH-HCID</i>
WS-SB-1-0.0-3.0-DUP (A4E1574-13)				Matrix: Soil		Batch: 24E0969		
Gasoline Range Organics	ND	---	22.1	mg/kg dry	1	05/29/24 09:15	NWTPH-HCID	
Diesel Range Organics	ND	---	55.3	mg/kg dry	1	05/29/24 09:15	NWTPH-HCID	
Oil Range Organics	ND	---	111	mg/kg dry	1	05/29/24 09:15	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 62 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 09:15</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>61 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/29/24 09:15</i>	<i>NWTPH-HCID</i>
WS-SB-1-5.0-8.0 (A4E1574-14)				Matrix: Soil		Batch: 24E0969		
Gasoline Range Organics	ND	---	23.6	mg/kg dry	1	05/29/24 09:38	NWTPH-HCID	
Diesel Range Organics	ND	---	59.1	mg/kg dry	1	05/29/24 09:38	NWTPH-HCID	
Oil Range Organics	ND	---	118	mg/kg dry	1	05/29/24 09:38	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 71 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 09:38</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>64 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/29/24 09:38</i>	<i>NWTPH-HCID</i>
WS-SB-3-0.0-5.0 (A4E1574-15)				Matrix: Soil		Batch: 24E0969		
Gasoline Range Organics	ND	---	25.9	mg/kg dry	1	05/29/24 10:02	NWTPH-HCID	
Diesel Range Organics	ND	---	64.7	mg/kg dry	1	05/29/24 10:02	NWTPH-HCID	
Oil Range Organics	ND	---	129	mg/kg dry	1	05/29/24 10:02	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 75 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 10:02</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>75 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/29/24 10:02</i>	<i>NWTPH-HCID</i>

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-3-5.0-8.0 (A4E1574-16)			Matrix: Soil			Batch: 24E0969		
Gasoline Range Organics	ND	---	30.0	mg/kg dry	1	05/29/24 10:25	NWTPH-HCID	
Diesel Range Organics	ND	---	75.0	mg/kg dry	1	05/29/24 10:25	NWTPH-HCID	
Oil Range Organics	ND	---	150	mg/kg dry	1	05/29/24 10:25	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 69 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 10:25</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>66 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/29/24 10:25</i>	<i>NWTPH-HCID</i>
WS-SB-5-0.0-5.0 (A4E1574-17)			Matrix: Soil			Batch: 24E0969		
Gasoline Range Organics	ND	---	27.0	mg/kg dry	1	05/29/24 10:49	NWTPH-HCID	
Diesel Range Organics	ND	---	67.5	mg/kg dry	1	05/29/24 10:49	NWTPH-HCID	
Oil Range Organics	ND	---	135	mg/kg dry	1	05/29/24 10:49	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 67 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 10:49</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>65 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/29/24 10:49</i>	<i>NWTPH-HCID</i>
WS-SB-5-5.0-8.5 (A4E1574-18)			Matrix: Soil			Batch: 24E0968		
Gasoline Range Organics	ND	---	25.9	mg/kg dry	1	05/29/24 03:02	NWTPH-HCID	
Diesel Range Organics	ND	---	64.6	mg/kg dry	1	05/29/24 03:02	NWTPH-HCID	
Oil Range Organics	ND	---	129	mg/kg dry	1	05/29/24 03:02	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 03:02</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>92 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/29/24 03:02</i>	<i>NWTPH-HCID</i>
WS-SB-10-0.0-3.0 (A4E1574-19)			Matrix: Soil			Batch: 24E0968		
Gasoline Range Organics	ND	---	35.4	mg/kg dry	1	05/28/24 21:11	NWTPH-HCID	
Diesel Range Organics	ND	---	88.5	mg/kg dry	1	05/28/24 21:11	NWTPH-HCID	
Oil Range Organics	ND	---	177	mg/kg dry	1	05/28/24 21:11	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/28/24 21:11</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>85 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/28/24 21:11</i>	<i>NWTPH-HCID</i>
WS-SB-10-5.0-10.0 (A4E1574-20)			Matrix: Soil			Batch: 24E0968		
Gasoline Range Organics	ND	---	38.5	mg/kg dry	1	05/28/24 21:35	NWTPH-HCID	
Diesel Range Organics	ND	---	96.4	mg/kg dry	1	05/28/24 21:35	NWTPH-HCID	
Oil Range Organics	ND	---	193	mg/kg dry	1	05/28/24 21:35	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/28/24 21:35</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>87 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/28/24 21:35</i>	<i>NWTPH-HCID</i>

Apex Laboratories

Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-RS-1-0-1 (A4E1574-21)				Matrix: Soil		Batch: 24E0968		
Gasoline Range Organics	ND	---	40.1	mg/kg dry	1	05/29/24 03:25	NWTPH-HCID	
Diesel Range Organics	ND	---	100	mg/kg dry	1	05/29/24 03:25	NWTPH-HCID	
Oil Range Organics	DET	---	201	mg/kg dry	1	05/29/24 03:25	NWTPH-HCID	F-03
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 03:25</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>102 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/29/24 03:25</i>	<i>NWTPH-HCID</i>
WS-RS-1-2-3 (A4E1574-22)				Matrix: Soil		Batch: 24E0968		
Gasoline Range Organics	ND	---	44.4	mg/kg dry	1	05/29/24 03:48	NWTPH-HCID	
Diesel Range Organics	ND	---	111	mg/kg dry	1	05/29/24 03:48	NWTPH-HCID	
Oil Range Organics	ND	---	222	mg/kg dry	1	05/29/24 03:48	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 03:48</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>93 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/29/24 03:48</i>	<i>NWTPH-HCID</i>
WS-RS-2-0-1 (A4E1574-23)				Matrix: Soil		Batch: 24E0968		
Gasoline Range Organics	ND	---	30.6	mg/kg dry	1	05/28/24 21:58	NWTPH-HCID	
Diesel Range Organics	ND	---	76.4	mg/kg dry	1	05/28/24 21:58	NWTPH-HCID	
Oil Range Organics	ND	---	153	mg/kg dry	1	05/28/24 21:58	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 124 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/28/24 21:58</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>116 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/28/24 21:58</i>	<i>NWTPH-HCID</i>
WS-RS-2-0-1-DUP (A4E1574-24)				Matrix: Soil		Batch: 24E0968		
Gasoline Range Organics	ND	---	25.9	mg/kg dry	1	05/28/24 22:22	NWTPH-HCID	
Diesel Range Organics	ND	---	64.9	mg/kg dry	1	05/28/24 22:22	NWTPH-HCID	
Oil Range Organics	ND	---	130	mg/kg dry	1	05/28/24 22:22	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 117 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/28/24 22:22</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>88 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/28/24 22:22</i>	<i>NWTPH-HCID</i>
WS-RS-2-2-3 (A4E1574-25)				Matrix: Soil		Batch: 24E0968		
Gasoline Range Organics	ND	---	27.0	mg/kg dry	1	05/28/24 23:55	NWTPH-HCID	
Diesel Range Organics	ND	---	67.6	mg/kg dry	1	05/28/24 23:55	NWTPH-HCID	
Oil Range Organics	DET	---	135	mg/kg dry	1	05/28/24 23:55	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 79 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/28/24 23:55</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>49 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/28/24 23:55</i>	<i>NWTPH-HCID S-06</i>

Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-RS-3-0-1 (A4E1574-26)			Matrix: Soil			Batch: 24E0968		
Gasoline Range Organics	ND	---	29.6	mg/kg dry	1	05/29/24 00:18	NWTPH-HCID	
Diesel Range Organics	ND	---	74.1	mg/kg dry	1	05/29/24 00:18	NWTPH-HCID	
Oil Range Organics	DET	---	148	mg/kg dry	1	05/29/24 00:18	NWTPH-HCID	F-03
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 105 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 00:18</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>60 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/29/24 00:18</i>	<i>NWTPH-HCID</i>
WS-RS-3-2-3 (A4E1574-27)			Matrix: Soil			Batch: 24E0968		
Gasoline Range Organics	ND	---	30.5	mg/kg dry	1	05/29/24 00:42	NWTPH-HCID	
Diesel Range Organics	ND	---	76.3	mg/kg dry	1	05/29/24 00:42	NWTPH-HCID	
Oil Range Organics	ND	---	153	mg/kg dry	1	05/29/24 00:42	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 79 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/29/24 00:42</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>50 %</i>		<i>50-150 %</i>		<i>1</i>	<i>05/29/24 00:42</i>	<i>NWTPH-HCID</i>
WS-SB-5-GW-10-20 (A4E1574-34)			Matrix: Water			Batch: 24E1027		DCNT
Gasoline Range Organics	DET	---	0.108	mg/L	1	05/30/24 02:06	NWTPH-HCID	F-09
Diesel Range Organics	DET	---	0.269	mg/L	1	05/30/24 02:06	NWTPH-HCID	F-11
Oil Range Organics	ND	---	0.269	mg/L	1	05/30/24 02:06	NWTPH-HCID	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/30/24 02:06</i>	<i>NWTPH-HCID</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>53 %</i>		<i>10-120 %</i>		<i>1</i>	<i>05/30/24 02:06</i>	<i>NWTPH-HCID</i>

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Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
WS-SB-6-GW-10-15 (A4E1574-01)				Matrix: Water		Batch: 24F0105			
Diesel	0.304	---	0.227	mg/L	1	06/04/24 19:18	NWTPH-Dx/SG	F-17	
Oil	ND	---	0.455	mg/L	1	06/04/24 19:18	NWTPH-Dx/SG		
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 106 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>06/04/24 19:18</i>	<i>NWTPH-Dx/SG</i>	<i>Q-41</i>
WS-RS-1-0-1 (A4E1574-21)				Matrix: Soil		Batch: 24F0117			
Diesel	ND	---	37.4	mg/kg dry	1	06/05/24 19:12	NWTPH-Dx/SG		
Oil	ND	---	74.8	mg/kg dry	1	06/05/24 19:12	NWTPH-Dx/SG	Q-37	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 71 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>06/05/24 19:12</i>	<i>NWTPH-Dx/SG</i>	
WS-RS-2-2-3 (A4E1574-25)				Matrix: Soil		Batch: 24F0117			
Diesel	ND	---	26.3	mg/kg dry	1	06/05/24 19:59	NWTPH-Dx/SG		
Oil	145	---	52.5	mg/kg dry	1	06/05/24 19:59	NWTPH-Dx/SG		
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>06/05/24 19:59</i>	<i>NWTPH-Dx/SG</i>	
WS-RS-3-0-1 (A4E1574-26)				Matrix: Soil		Batch: 24F0117			
Diesel	ND	---	28.1	mg/kg dry	1	06/05/24 20:23	NWTPH-Dx/SG		
Oil	ND	---	56.1	mg/kg dry	1	06/05/24 20:23	NWTPH-Dx/SG		
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>06/05/24 20:23</i>	<i>NWTPH-Dx/SG</i>	
WS-SB-5-GW-10-20 (A4E1574-34)				Matrix: Water		Batch: 24F0105			
Diesel	ND	---	0.215	mg/L	1	06/04/24 19:40	NWTPH-Dx/SG		
Oil	ND	---	0.430	mg/L	1	06/04/24 19:40	NWTPH-Dx/SG		
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>06/04/24 19:40</i>	<i>NWTPH-Dx/SG</i>	<i>Q-41</i>

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ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-6-GW-10-15 (A4E1574-01)			Matrix: Water			Batch: 24F0065		
Gasoline Range Organics	0.173	---	0.100	mg/L	1	06/04/24 18:29	NWTPH-Gx (MS)	F-03
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 101 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>06/04/24 18:29</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>103 %</i>		<i>50-150 %</i>		<i>1</i>	<i>06/04/24 18:29</i>	<i>NWTPH-Gx (MS)</i>
WS-SB-5-GW-10-20 (A4E1574-34)			Matrix: Water			Batch: 24F0065		
Gasoline Range Organics	ND	---	0.100	mg/L	1	06/04/24 18:51	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 101 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>06/04/24 18:51</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>103 %</i>		<i>50-150 %</i>		<i>1</i>	<i>06/04/24 18:51</i>	<i>NWTPH-Gx (MS)</i>

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-RS-2-2-3 (A4E1574-25)				Matrix: Soil		Batch: 24F0510		C-07
Aroclor 1016	ND	---	13.3	ug/kg dry	1	06/14/24 21:39	EPA 8082A	
Aroclor 1221	ND	---	13.3	ug/kg dry	1	06/14/24 21:39	EPA 8082A	
Aroclor 1232	ND	---	13.3	ug/kg dry	1	06/14/24 21:39	EPA 8082A	
Aroclor 1242	ND	---	13.3	ug/kg dry	1	06/14/24 21:39	EPA 8082A	
Aroclor 1248	ND	---	13.3	ug/kg dry	1	06/14/24 21:39	EPA 8082A	
Aroclor 1254	ND	---	13.3	ug/kg dry	1	06/14/24 21:39	EPA 8082A	
Aroclor 1260	ND	---	13.3	ug/kg dry	1	06/14/24 21:39	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 88 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>06/14/24 21:39</i>	<i>EPA 8082A</i>

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-6-GW-10-15 (A4E1574-01)				Matrix: Water		Batch: 24E0973		DCNT
Acenaphthene	ND	---	0.0278	ug/L	1	05/29/24 11:30	EPA 8270E	
Acenaphthylene	ND	---	0.0278	ug/L	1	05/29/24 11:30	EPA 8270E	
Anthracene	ND	---	0.0278	ug/L	1	05/29/24 11:30	EPA 8270E	
Benz(a)anthracene	ND	---	0.0278	ug/L	1	05/29/24 11:30	EPA 8270E	
Benzo(a)pyrene	ND	---	0.0417	ug/L	1	05/29/24 11:30	EPA 8270E	
Benzo(b)fluoranthene	ND	---	0.0417	ug/L	1	05/29/24 11:30	EPA 8270E	
Benzo(k)fluoranthene	ND	---	0.0417	ug/L	1	05/29/24 11:30	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	0.0278	ug/L	1	05/29/24 11:30	EPA 8270E	
Chrysene	ND	---	0.0278	ug/L	1	05/29/24 11:30	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	0.0278	ug/L	1	05/29/24 11:30	EPA 8270E	
Fluoranthene	ND	---	0.0278	ug/L	1	05/29/24 11:30	EPA 8270E	
Fluorene	ND	---	0.0278	ug/L	1	05/29/24 11:30	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	0.0278	ug/L	1	05/29/24 11:30	EPA 8270E	
1-Methylnaphthalene	ND	---	0.0556	ug/L	1	05/29/24 11:30	EPA 8270E	
2-Methylnaphthalene	ND	---	0.0556	ug/L	1	05/29/24 11:30	EPA 8270E	
Naphthalene	ND	---	0.0556	ug/L	1	05/29/24 11:30	EPA 8270E	
Phenanthrene	ND	---	0.0278	ug/L	1	05/29/24 11:30	EPA 8270E	
Pyrene	ND	---	0.0278	ug/L	1	05/29/24 11:30	EPA 8270E	
Dibenzofuran	ND	---	0.0278	ug/L	1	05/29/24 11:30	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	0.278	ug/L	1	05/29/24 11:30	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 75 %</i>		<i>Limits: 44-120 %</i>		<i>1</i>	<i>05/29/24 11:30</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>72 %</i>		<i>44-120 %</i>		<i>1</i>	<i>05/29/24 11:30</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>30 %</i>		<i>10-133 %</i>		<i>1</i>	<i>05/29/24 11:30</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>61 %</i>		<i>50-134 %</i>		<i>1</i>	<i>05/29/24 11:30</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>42 %</i>		<i>19-120 %</i>		<i>1</i>	<i>05/29/24 11:30</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>110 %</i>		<i>43-140 %</i>		<i>1</i>	<i>05/29/24 11:30</i>	<i>EPA 8270E</i>

WS-SB-1-GW-5-15 (A4E1574-02)				Matrix: Water		Batch: 24E0999		
Acenaphthene	ND	---	0.0213	ug/L	1	05/29/24 16:36	EPA 8270E	
Acenaphthylene	ND	---	0.0213	ug/L	1	05/29/24 16:36	EPA 8270E	
Anthracene	ND	---	0.0213	ug/L	1	05/29/24 16:36	EPA 8270E	
Benz(a)anthracene	ND	---	0.0213	ug/L	1	05/29/24 16:36	EPA 8270E	
Benzo(a)pyrene	ND	---	0.0319	ug/L	1	05/29/24 16:36	EPA 8270E	
Benzo(b)fluoranthene	ND	---	0.0319	ug/L	1	05/29/24 16:36	EPA 8270E	

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
			Matrix: Water			Batch: 24E0999		
WS-SB-1-GW-5-15 (A4E1574-02)								
Benzo(k)fluoranthene	ND	---	0.0319	ug/L	1	05/29/24 16:36	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	0.0213	ug/L	1	05/29/24 16:36	EPA 8270E	
Chrysene	ND	---	0.0213	ug/L	1	05/29/24 16:36	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	0.0213	ug/L	1	05/29/24 16:36	EPA 8270E	
Fluoranthene	ND	---	0.0213	ug/L	1	05/29/24 16:36	EPA 8270E	
Fluorene	ND	---	0.0213	ug/L	1	05/29/24 16:36	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	0.0213	ug/L	1	05/29/24 16:36	EPA 8270E	
1-Methylnaphthalene	ND	---	0.0426	ug/L	1	05/29/24 16:36	EPA 8270E	
2-Methylnaphthalene	ND	---	0.0426	ug/L	1	05/29/24 16:36	EPA 8270E	
Naphthalene	ND	---	0.0426	ug/L	1	05/29/24 16:36	EPA 8270E	
Phenanthrene	ND	---	0.0213	ug/L	1	05/29/24 16:36	EPA 8270E	
Pyrene	ND	---	0.0213	ug/L	1	05/29/24 16:36	EPA 8270E	
Dibenzofuran	ND	---	0.0213	ug/L	1	05/29/24 16:36	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	0.213	ug/L	1	05/29/24 16:36	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>			<i>Recovery: 60 %</i>	<i>Limits: 44-120 %</i>	<i>1</i>	<i>05/29/24 16:36</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>			<i>49 %</i>	<i>44-120 %</i>	<i>1</i>	<i>05/29/24 16:36</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>			<i>21 %</i>	<i>10-133 %</i>	<i>1</i>	<i>05/29/24 16:36</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>			<i>89 %</i>	<i>50-134 %</i>	<i>1</i>	<i>05/29/24 16:36</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>			<i>31 %</i>	<i>19-120 %</i>	<i>1</i>	<i>05/29/24 16:36</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>			<i>79 %</i>	<i>43-140 %</i>	<i>1</i>	<i>05/29/24 16:36</i>	<i>EPA 8270E</i>	

			Matrix: Water			Batch: 24E0999		
WS-SB-3-GW-10-20 (A4E1574-03)								
Acenaphthene	ND	---	0.0192	ug/L	1	05/29/24 17:11	EPA 8270E	
Acenaphthylene	ND	---	0.0192	ug/L	1	05/29/24 17:11	EPA 8270E	
Anthracene	ND	---	0.0192	ug/L	1	05/29/24 17:11	EPA 8270E	
Benz(a)anthracene	ND	---	0.0192	ug/L	1	05/29/24 17:11	EPA 8270E	
Benzo(a)pyrene	ND	---	0.0288	ug/L	1	05/29/24 17:11	EPA 8270E	
Benzo(b)fluoranthene	ND	---	0.0288	ug/L	1	05/29/24 17:11	EPA 8270E	
Benzo(k)fluoranthene	ND	---	0.0288	ug/L	1	05/29/24 17:11	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	0.0192	ug/L	1	05/29/24 17:11	EPA 8270E	
Chrysene	ND	---	0.0192	ug/L	1	05/29/24 17:11	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	0.0192	ug/L	1	05/29/24 17:11	EPA 8270E	
Fluoranthene	ND	---	0.0192	ug/L	1	05/29/24 17:11	EPA 8270E	
Fluorene	ND	---	0.0192	ug/L	1	05/29/24 17:11	EPA 8270E	

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ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-3-GW-10-20 (A4E1574-03)			Matrix: Water			Batch: 24E0999		
Indeno(1,2,3-cd)pyrene	ND	---	0.0192	ug/L	1	05/29/24 17:11	EPA 8270E	
1-Methylnaphthalene	ND	---	0.0385	ug/L	1	05/29/24 17:11	EPA 8270E	
2-Methylnaphthalene	ND	---	0.0385	ug/L	1	05/29/24 17:11	EPA 8270E	
Naphthalene	ND	---	0.0385	ug/L	1	05/29/24 17:11	EPA 8270E	
Phenanthrene	ND	---	0.0192	ug/L	1	05/29/24 17:11	EPA 8270E	
Pyrene	ND	---	0.0192	ug/L	1	05/29/24 17:11	EPA 8270E	
Dibenzofuran	ND	---	0.0192	ug/L	1	05/29/24 17:11	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	0.192	ug/L	1	05/29/24 17:11	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 84 %</i>		<i>Limits: 44-120 %</i>		<i>1</i>	<i>05/29/24 17:11</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>63 %</i>		<i>44-120 %</i>		<i>1</i>	<i>05/29/24 17:11</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>27 %</i>		<i>10-133 %</i>		<i>1</i>	<i>05/29/24 17:11</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>72 %</i>		<i>50-134 %</i>		<i>1</i>	<i>05/29/24 17:11</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>40 %</i>		<i>19-120 %</i>		<i>1</i>	<i>05/29/24 17:11</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>91 %</i>		<i>43-140 %</i>		<i>1</i>	<i>05/29/24 17:11</i>	<i>EPA 8270E</i>
WS-SB-3-GW-10-20-DUP (A4E1574-04)			Matrix: Water			Batch: 24E0999		
Acenaphthene	ND	---	0.0189	ug/L	1	05/29/24 17:45	EPA 8270E	
Acenaphthylene	ND	---	0.0189	ug/L	1	05/29/24 17:45	EPA 8270E	
Anthracene	ND	---	0.0189	ug/L	1	05/29/24 17:45	EPA 8270E	
Benz(a)anthracene	ND	---	0.0189	ug/L	1	05/29/24 17:45	EPA 8270E	
Benzo(a)pyrene	ND	---	0.0283	ug/L	1	05/29/24 17:45	EPA 8270E	
Benzo(b)fluoranthene	ND	---	0.0283	ug/L	1	05/29/24 17:45	EPA 8270E	
Benzo(k)fluoranthene	ND	---	0.0283	ug/L	1	05/29/24 17:45	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	0.0189	ug/L	1	05/29/24 17:45	EPA 8270E	
Chrysene	ND	---	0.0189	ug/L	1	05/29/24 17:45	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	0.0189	ug/L	1	05/29/24 17:45	EPA 8270E	
Fluoranthene	ND	---	0.0189	ug/L	1	05/29/24 17:45	EPA 8270E	
Fluorene	ND	---	0.0189	ug/L	1	05/29/24 17:45	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	0.0189	ug/L	1	05/29/24 17:45	EPA 8270E	
1-Methylnaphthalene	ND	---	0.0377	ug/L	1	05/29/24 17:45	EPA 8270E	
2-Methylnaphthalene	ND	---	0.0377	ug/L	1	05/29/24 17:45	EPA 8270E	
Naphthalene	ND	---	0.0377	ug/L	1	05/29/24 17:45	EPA 8270E	
Phenanthrene	ND	---	0.0189	ug/L	1	05/29/24 17:45	EPA 8270E	
Pyrene	ND	---	0.0189	ug/L	1	05/29/24 17:45	EPA 8270E	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-3-GW-10-20-DUP (A4E1574-04)			Matrix: Water			Batch: 24E0999		
Dibenzofuran	ND	---	0.0189	ug/L	1	05/29/24 17:45	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	0.189	ug/L	1	05/29/24 17:45	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 67 %</i>		<i>Limits: 44-120 %</i>		<i>1</i>	<i>05/29/24 17:45</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>52 %</i>		<i>44-120 %</i>		<i>1</i>	<i>05/29/24 17:45</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>21 %</i>		<i>10-133 %</i>		<i>1</i>	<i>05/29/24 17:45</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>82 %</i>		<i>50-134 %</i>		<i>1</i>	<i>05/29/24 17:45</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>30 %</i>		<i>19-120 %</i>		<i>1</i>	<i>05/29/24 17:45</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>84 %</i>		<i>43-140 %</i>		<i>1</i>	<i>05/29/24 17:45</i>	<i>EPA 8270E</i>
WS-SB-EB-20240521 (A4E1574-05RE1)			Matrix: Water			Batch: 24E0973		
Acenaphthene	ND	---	0.0247	ug/L	1	05/29/24 13:57	EPA 8270E	
Acenaphthylene	ND	---	0.0247	ug/L	1	05/29/24 13:57	EPA 8270E	
Anthracene	ND	---	0.0247	ug/L	1	05/29/24 13:57	EPA 8270E	
Benz(a)anthracene	ND	---	0.0247	ug/L	1	05/29/24 13:57	EPA 8270E	
Benzo(a)pyrene	ND	---	0.0370	ug/L	1	05/29/24 13:57	EPA 8270E	
Benzo(b)fluoranthene	ND	---	0.0370	ug/L	1	05/29/24 13:57	EPA 8270E	
Benzo(k)fluoranthene	ND	---	0.0370	ug/L	1	05/29/24 13:57	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	0.0247	ug/L	1	05/29/24 13:57	EPA 8270E	
Chrysene	ND	---	0.0247	ug/L	1	05/29/24 13:57	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	0.0247	ug/L	1	05/29/24 13:57	EPA 8270E	
Fluoranthene	ND	---	0.0247	ug/L	1	05/29/24 13:57	EPA 8270E	
Fluorene	ND	---	0.0247	ug/L	1	05/29/24 13:57	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	0.0247	ug/L	1	05/29/24 13:57	EPA 8270E	
1-Methylnaphthalene	ND	---	0.0494	ug/L	1	05/29/24 13:57	EPA 8270E	
2-Methylnaphthalene	ND	---	0.0494	ug/L	1	05/29/24 13:57	EPA 8270E	
Naphthalene	ND	---	0.0494	ug/L	1	05/29/24 13:57	EPA 8270E	
Phenanthrene	ND	---	0.0247	ug/L	1	05/29/24 13:57	EPA 8270E	
Pyrene	ND	---	0.0247	ug/L	1	05/29/24 13:57	EPA 8270E	
Dibenzofuran	ND	---	0.0247	ug/L	1	05/29/24 13:57	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	0.247	ug/L	1	05/29/24 13:57	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 48 %</i>		<i>Limits: 44-120 %</i>		<i>1</i>	<i>05/29/24 13:57</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>38 %</i>		<i>44-120 %</i>		<i>1</i>	<i>05/29/24 13:57</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>16 %</i>		<i>10-133 %</i>		<i>1</i>	<i>05/29/24 13:57</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>82 %</i>		<i>50-134 %</i>		<i>1</i>	<i>05/29/24 13:57</i>	<i>EPA 8270E</i>

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-EB-20240521 (A4E1574-05RE1)			Matrix: Water			Batch: 24E0973		
<i>Surrogate: 2-Fluorophenol (Surr)</i>			<i>Recovery: 21 %</i>	<i>Limits: 19-120 %</i>	<i>1</i>	<i>05/29/24 13:57</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>			<i>76 %</i>	<i>43-140 %</i>	<i>1</i>	<i>05/29/24 13:57</i>	<i>EPA 8270E</i>	
WS-SB-EB-20240522 (A4E1574-06)			Matrix: Water			Batch: 24E0999		
Acenaphthene	ND	---	0.0194	ug/L	1	05/29/24 18:20	EPA 8270E	
Acenaphthylene	ND	---	0.0194	ug/L	1	05/29/24 18:20	EPA 8270E	
Anthracene	ND	---	0.0194	ug/L	1	05/29/24 18:20	EPA 8270E	
Benz(a)anthracene	ND	---	0.0194	ug/L	1	05/29/24 18:20	EPA 8270E	
Benzo(a)pyrene	ND	---	0.0291	ug/L	1	05/29/24 18:20	EPA 8270E	
Benzo(b)fluoranthene	ND	---	0.0291	ug/L	1	05/29/24 18:20	EPA 8270E	
Benzo(k)fluoranthene	ND	---	0.0291	ug/L	1	05/29/24 18:20	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	0.0194	ug/L	1	05/29/24 18:20	EPA 8270E	
Chrysene	ND	---	0.0194	ug/L	1	05/29/24 18:20	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	0.0194	ug/L	1	05/29/24 18:20	EPA 8270E	
Fluoranthene	ND	---	0.0194	ug/L	1	05/29/24 18:20	EPA 8270E	
Fluorene	ND	---	0.0194	ug/L	1	05/29/24 18:20	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	0.0194	ug/L	1	05/29/24 18:20	EPA 8270E	
1-Methylnaphthalene	ND	---	0.0388	ug/L	1	05/29/24 18:20	EPA 8270E	
2-Methylnaphthalene	ND	---	0.0388	ug/L	1	05/29/24 18:20	EPA 8270E	
Naphthalene	ND	---	0.0388	ug/L	1	05/29/24 18:20	EPA 8270E	
Phenanthrene	ND	---	0.0194	ug/L	1	05/29/24 18:20	EPA 8270E	
Pyrene	ND	---	0.0194	ug/L	1	05/29/24 18:20	EPA 8270E	
Dibenzofuran	ND	---	0.0194	ug/L	1	05/29/24 18:20	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	0.194	ug/L	1	05/29/24 18:20	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>			<i>Recovery: 69 %</i>	<i>Limits: 44-120 %</i>	<i>1</i>	<i>05/29/24 18:20</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>			<i>54 %</i>	<i>44-120 %</i>	<i>1</i>	<i>05/29/24 18:20</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>			<i>22 %</i>	<i>10-133 %</i>	<i>1</i>	<i>05/29/24 18:20</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>			<i>86 %</i>	<i>50-134 %</i>	<i>1</i>	<i>05/29/24 18:20</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>			<i>32 %</i>	<i>19-120 %</i>	<i>1</i>	<i>05/29/24 18:20</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>			<i>75 %</i>	<i>43-140 %</i>	<i>1</i>	<i>05/29/24 18:20</i>	<i>EPA 8270E</i>	
WS-RS-EB-20240522 (A4E1574-07)			Matrix: Water			Batch: 24E0999		
Acenaphthene	ND	---	0.0253	ug/L	1	05/29/24 18:55	EPA 8270E	
Acenaphthylene	ND	---	0.0253	ug/L	1	05/29/24 18:55	EPA 8270E	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-RS-EB-20240522 (A4E1574-07)				Matrix: Water		Batch: 24E0999		
Anthracene	ND	---	0.0253	ug/L	1	05/29/24 18:55	EPA 8270E	
Benz(a)anthracene	ND	---	0.0253	ug/L	1	05/29/24 18:55	EPA 8270E	
Benzo(a)pyrene	ND	---	0.0380	ug/L	1	05/29/24 18:55	EPA 8270E	
Benzo(b)fluoranthene	ND	---	0.0380	ug/L	1	05/29/24 18:55	EPA 8270E	
Benzo(k)fluoranthene	ND	---	0.0380	ug/L	1	05/29/24 18:55	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	0.0253	ug/L	1	05/29/24 18:55	EPA 8270E	
Chrysene	ND	---	0.0253	ug/L	1	05/29/24 18:55	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	0.0253	ug/L	1	05/29/24 18:55	EPA 8270E	
Fluoranthene	ND	---	0.0253	ug/L	1	05/29/24 18:55	EPA 8270E	
Fluorene	ND	---	0.0253	ug/L	1	05/29/24 18:55	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	0.0253	ug/L	1	05/29/24 18:55	EPA 8270E	
1-Methylnaphthalene	ND	---	0.0506	ug/L	1	05/29/24 18:55	EPA 8270E	
2-Methylnaphthalene	ND	---	0.0506	ug/L	1	05/29/24 18:55	EPA 8270E	
Naphthalene	ND	---	0.0506	ug/L	1	05/29/24 18:55	EPA 8270E	
Phenanthrene	ND	---	0.0253	ug/L	1	05/29/24 18:55	EPA 8270E	
Pyrene	ND	---	0.0253	ug/L	1	05/29/24 18:55	EPA 8270E	
Dibenzofuran	ND	---	0.0253	ug/L	1	05/29/24 18:55	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	0.253	ug/L	1	05/29/24 18:55	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 66 %</i>		<i>Limits: 44-120 %</i>	<i>1</i>	<i>05/29/24 18:55</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>		<i>54 %</i>		<i>44-120 %</i>	<i>1</i>	<i>05/29/24 18:55</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>25 %</i>		<i>10-133 %</i>	<i>1</i>	<i>05/29/24 18:55</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>		<i>105 %</i>		<i>50-134 %</i>	<i>1</i>	<i>05/29/24 18:55</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>36 %</i>		<i>19-120 %</i>	<i>1</i>	<i>05/29/24 18:55</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>80 %</i>		<i>43-140 %</i>	<i>1</i>	<i>05/29/24 18:55</i>	<i>EPA 8270E</i>	

WS-SB-2-0.0-5.0 (A4E1574-08RE1)				Matrix: Soil		Batch: 24E1016		
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Acenaphthene	ND	---	3.70	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
Acenaphthylene	ND	---	3.70	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
Anthracene	ND	---	3.70	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
Benz(a)anthracene	ND	---	3.70	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
Benzo(a)pyrene	ND	---	5.54	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
Benzo(b)fluoranthene	ND	---	5.54	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
Benzo(k)fluoranthene	ND	---	5.54	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	3.70	ug/kg dry	1	05/29/24 18:46	EPA 8270E	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-2-0.0-5.0 (A4E1574-08RE1)				Matrix: Soil		Batch: 24E1016		
Chrysene	ND	---	3.70	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	3.70	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
Fluoranthene	ND	---	3.70	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
Fluorene	ND	---	3.70	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	3.70	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
1-Methylnaphthalene	ND	---	7.38	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
2-Methylnaphthalene	ND	---	7.38	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
Naphthalene	ND	---	7.38	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
Phenanthrene	ND	---	3.70	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
Pyrene	ND	---	3.70	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
Dibenzofuran	ND	---	3.70	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	37.0	ug/kg dry	1	05/29/24 18:46	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 94 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>05/29/24 18:46</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>92 %</i>		<i>44-120 %</i>		<i>1</i>	<i>05/29/24 18:46</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>111 %</i>		<i>33-122 %</i>		<i>1</i>	<i>05/29/24 18:46</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>99 %</i>		<i>54-127 %</i>		<i>1</i>	<i>05/29/24 18:46</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>98 %</i>		<i>35-120 %</i>		<i>1</i>	<i>05/29/24 18:46</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>106 %</i>		<i>39-132 %</i>		<i>1</i>	<i>05/29/24 18:46</i>	<i>EPA 8270E</i>
WS-SB-2-5.0-7.0 (A4E1574-09)				Matrix: Soil		Batch: 24E1016		
Acenaphthene	ND	---	3.66	ug/kg dry	1	05/30/24 15:28	EPA 8270E	
Acenaphthylene	ND	---	3.66	ug/kg dry	1	05/30/24 15:28	EPA 8270E	
Anthracene	ND	---	3.66	ug/kg dry	1	05/30/24 15:28	EPA 8270E	
Benz(a)anthracene	ND	---	3.66	ug/kg dry	1	05/30/24 15:28	EPA 8270E	
Benzo(a)pyrene	ND	---	5.48	ug/kg dry	1	05/30/24 15:28	EPA 8270E	
Benzo(b)fluoranthene	ND	---	5.48	ug/kg dry	1	05/30/24 15:28	EPA 8270E	
Benzo(k)fluoranthene	ND	---	5.48	ug/kg dry	1	05/30/24 15:28	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	3.66	ug/kg dry	1	05/30/24 15:28	EPA 8270E	
Chrysene	ND	---	3.66	ug/kg dry	1	05/30/24 15:28	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	3.66	ug/kg dry	1	05/30/24 15:28	EPA 8270E	
Fluoranthene	ND	---	3.66	ug/kg dry	1	05/30/24 15:28	EPA 8270E	
Fluorene	ND	---	3.66	ug/kg dry	1	05/30/24 15:28	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	3.66	ug/kg dry	1	05/30/24 15:28	EPA 8270E	
1-Methylnaphthalene	ND	---	7.31	ug/kg dry	1	05/30/24 15:28	EPA 8270E	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
WS-SB-2-5.0-7.0 (A4E1574-09)			Matrix: Soil		Batch: 24E1016				
2-Methylnaphthalene	ND	---	7.31	ug/kg dry	1	05/30/24 15:28	EPA 8270E		
Naphthalene	ND	---	7.31	ug/kg dry	1	05/30/24 15:28	EPA 8270E		
Phenanthrene	ND	---	3.66	ug/kg dry	1	05/30/24 15:28	EPA 8270E		
Pyrene	4.89	---	3.66	ug/kg dry	1	05/30/24 15:28	EPA 8270E		
Dibenzofuran	ND	---	3.66	ug/kg dry	1	05/30/24 15:28	EPA 8270E		
Pentachlorophenol (PCP)	ND	---	36.6	ug/kg dry	1	05/30/24 15:28	EPA 8270E		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>05/30/24 15:28</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>				<i>96 %</i>		<i>44-120 %</i>	<i>1</i>	<i>05/30/24 15:28</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>				<i>97 %</i>		<i>33-122 %</i>	<i>1</i>	<i>05/30/24 15:28</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>				<i>118 %</i>		<i>54-127 %</i>	<i>1</i>	<i>05/30/24 15:28</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>				<i>94 %</i>		<i>35-120 %</i>	<i>1</i>	<i>05/30/24 15:28</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>				<i>101 %</i>		<i>39-132 %</i>	<i>1</i>	<i>05/30/24 15:28</i>	<i>EPA 8270E</i>
WS-SB-4-0.0-5.0 (A4E1574-10)			Matrix: Soil		Batch: 24E1016				
Acenaphthene	ND	---	3.82	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Acenaphthylene	ND	---	3.82	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Anthracene	ND	---	3.82	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Benz(a)anthracene	ND	---	3.82	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Benzo(a)pyrene	ND	---	5.72	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Benzo(b)fluoranthene	ND	---	5.72	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Benzo(k)fluoranthene	ND	---	5.72	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Benzo(g,h,i)perylene	ND	---	3.82	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Chrysene	ND	---	3.82	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Dibenz(a,h)anthracene	ND	---	3.82	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Fluoranthene	ND	---	3.82	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Fluorene	ND	---	3.82	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Indeno(1,2,3-cd)pyrene	ND	---	3.82	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
1-Methylnaphthalene	ND	---	7.63	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
2-Methylnaphthalene	ND	---	7.63	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Naphthalene	ND	---	7.63	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Phenanthrene	ND	---	3.82	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Pyrene	ND	---	3.82	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Dibenzofuran	ND	---	3.82	ug/kg dry	1	05/30/24 16:02	EPA 8270E		
Pentachlorophenol (PCP)	ND	---	38.2	ug/kg dry	1	05/30/24 16:02	EPA 8270E		

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-4-0.0-5.0 (A4E1574-10)				Matrix: Soil		Batch: 24E1016		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 109 %</i>		<i>Limits: 37-122 %</i>		1	05/30/24 16:02	EPA 8270E
<i>2-Fluorobiphenyl (Surr)</i>		<i>93 %</i>		<i>44-120 %</i>		1	05/30/24 16:02	EPA 8270E
<i>Phenol-d6 (Surr)</i>		<i>101 %</i>		<i>33-122 %</i>		1	05/30/24 16:02	EPA 8270E
<i>p-Terphenyl-d14 (Surr)</i>		<i>103 %</i>		<i>54-127 %</i>		1	05/30/24 16:02	EPA 8270E
<i>2-Fluorophenol (Surr)</i>		<i>96 %</i>		<i>35-120 %</i>		1	05/30/24 16:02	EPA 8270E
<i>2,4,6-Tribromophenol (Surr)</i>		<i>96 %</i>		<i>39-132 %</i>		1	05/30/24 16:02	EPA 8270E
WS-SB-4-5.0-9.0 (A4E1574-11)				Matrix: Soil		Batch: 24E1016		
Acenaphthene	ND	---	4.11	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Acenaphthylene	ND	---	4.11	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Anthracene	ND	---	4.11	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Benz(a)anthracene	ND	---	4.11	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Benzo(a)pyrene	ND	---	6.15	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Benzo(b)fluoranthene	ND	---	6.15	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Benzo(k)fluoranthene	ND	---	6.15	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	4.11	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Chrysene	ND	---	4.11	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	4.11	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Fluoranthene	ND	---	4.11	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Fluorene	ND	---	4.11	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	4.11	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
1-Methylnaphthalene	ND	---	8.20	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
2-Methylnaphthalene	ND	---	8.20	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Naphthalene	ND	---	8.20	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Phenanthrene	ND	---	4.11	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Pyrene	ND	---	4.11	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Dibenzofuran	ND	---	4.11	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	41.1	ug/kg dry	1	05/30/24 16:37	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 37-122 %</i>		1	05/30/24 16:37	EPA 8270E
<i>2-Fluorobiphenyl (Surr)</i>		<i>94 %</i>		<i>44-120 %</i>		1	05/30/24 16:37	EPA 8270E
<i>Phenol-d6 (Surr)</i>		<i>94 %</i>		<i>33-122 %</i>		1	05/30/24 16:37	EPA 8270E
<i>p-Terphenyl-d14 (Surr)</i>		<i>114 %</i>		<i>54-127 %</i>		1	05/30/24 16:37	EPA 8270E
<i>2-Fluorophenol (Surr)</i>		<i>92 %</i>		<i>35-120 %</i>		1	05/30/24 16:37	EPA 8270E
<i>2,4,6-Tribromophenol (Surr)</i>		<i>96 %</i>		<i>39-132 %</i>		1	05/30/24 16:37	EPA 8270E

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-1-0.0-3.0 (A4E1574-12RE1)				Matrix: Soil		Batch: 24E1016		
Acenaphthene	ND	---	3.23	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Acenaphthylene	ND	---	3.23	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Anthracene	ND	---	3.23	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Benz(a)anthracene	ND	---	3.23	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Benzo(a)pyrene	ND	---	4.84	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Benzo(b)fluoranthene	ND	---	4.84	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Benzo(k)fluoranthene	ND	---	4.84	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	3.23	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Chrysene	ND	---	3.23	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	3.23	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Fluoranthene	ND	---	3.23	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Fluorene	ND	---	3.23	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	3.23	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
1-Methylnaphthalene	ND	---	6.45	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
2-Methylnaphthalene	ND	---	6.45	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Naphthalene	ND	---	6.45	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Phenanthrene	ND	---	3.23	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Pyrene	ND	---	3.23	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Dibenzofuran	ND	---	3.23	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	32.3	ug/kg dry	1	05/30/24 22:50	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>05/30/24 22:50</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>97 %</i>		<i>44-120 %</i>		<i>1</i>	<i>05/30/24 22:50</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>110 %</i>		<i>33-122 %</i>		<i>1</i>	<i>05/30/24 22:50</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>110 %</i>		<i>54-127 %</i>		<i>1</i>	<i>05/30/24 22:50</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>99 %</i>		<i>35-120 %</i>		<i>1</i>	<i>05/30/24 22:50</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>97 %</i>		<i>39-132 %</i>		<i>1</i>	<i>05/30/24 22:50</i>	<i>EPA 8270E</i>

WS-SB-1-0.0-3.0-DUP (A4E1574-13RE1)				Matrix: Soil		Batch: 24E1016		
Acenaphthene	ND	---	2.92	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
Acenaphthylene	ND	---	2.92	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
Anthracene	ND	---	2.92	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
Benz(a)anthracene	ND	---	2.92	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
Benzo(a)pyrene	ND	---	4.38	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
Benzo(b)fluoranthene	ND	---	4.38	ug/kg dry	1	05/30/24 23:23	EPA 8270E	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-1-0.0-3.0-DUP (A4E1574-13RE1)			Matrix: Soil		Batch: 24E1016			
Benzo(k)fluoranthene	ND	---	4.38	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	2.92	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
Chrysene	ND	---	2.92	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	2.92	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
Fluoranthene	ND	---	2.92	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
Fluorene	ND	---	2.92	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	2.92	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
1-Methylnaphthalene	ND	---	5.83	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
2-Methylnaphthalene	ND	---	5.83	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
Naphthalene	ND	---	5.83	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
Phenanthrene	ND	---	2.92	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
Pyrene	ND	---	2.92	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
Dibenzofuran	ND	---	2.92	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	29.2	ug/kg dry	1	05/30/24 23:23	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>			<i>Recovery: 113 %</i>	<i>Limits: 37-122 %</i>	<i>1</i>	<i>05/30/24 23:23</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>			<i>92 %</i>	<i>44-120 %</i>	<i>1</i>	<i>05/30/24 23:23</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>			<i>113 %</i>	<i>33-122 %</i>	<i>1</i>	<i>05/30/24 23:23</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>			<i>106 %</i>	<i>54-127 %</i>	<i>1</i>	<i>05/30/24 23:23</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>			<i>99 %</i>	<i>35-120 %</i>	<i>1</i>	<i>05/30/24 23:23</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>			<i>91 %</i>	<i>39-132 %</i>	<i>1</i>	<i>05/30/24 23:23</i>	<i>EPA 8270E</i>	

WS-SB-1-5.0-8.0 (A4E1574-14RE1)			Matrix: Soil		Batch: 24E1016			R-04
Acenaphthene	ND	---	13.0	ug/kg dry	4	05/30/24 20:36	EPA 8270E	
Acenaphthylene	ND	---	13.0	ug/kg dry	4	05/30/24 20:36	EPA 8270E	
Anthracene	ND	---	13.0	ug/kg dry	4	05/30/24 20:36	EPA 8270E	
Benz(a)anthracene	ND	---	13.0	ug/kg dry	4	05/30/24 20:36	EPA 8270E	
Benzo(a)pyrene	ND	---	19.5	ug/kg dry	4	05/30/24 20:36	EPA 8270E	
Benzo(b)fluoranthene	ND	---	19.5	ug/kg dry	4	05/30/24 20:36	EPA 8270E	
Benzo(k)fluoranthene	ND	---	19.5	ug/kg dry	4	05/30/24 20:36	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	13.0	ug/kg dry	4	05/30/24 20:36	EPA 8270E	
Chrysene	ND	---	13.0	ug/kg dry	4	05/30/24 20:36	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	13.0	ug/kg dry	4	05/30/24 20:36	EPA 8270E	
Fluoranthene	ND	---	13.0	ug/kg dry	4	05/30/24 20:36	EPA 8270E	
Fluorene	ND	---	13.0	ug/kg dry	4	05/30/24 20:36	EPA 8270E	

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ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
WS-SB-1-5.0-8.0 (A4E1574-14RE1)			Matrix: Soil			Batch: 24E1016		R-04	
Indeno(1,2,3-cd)pyrene	ND	---	13.0	ug/kg dry	4	05/30/24 20:36	EPA 8270E		
1-Methylnaphthalene	ND	---	26.0	ug/kg dry	4	05/30/24 20:36	EPA 8270E		
2-Methylnaphthalene	ND	---	26.0	ug/kg dry	4	05/30/24 20:36	EPA 8270E		
Naphthalene	ND	---	26.0	ug/kg dry	4	05/30/24 20:36	EPA 8270E		
Phenanthrene	ND	---	13.0	ug/kg dry	4	05/30/24 20:36	EPA 8270E		
Pyrene	ND	---	13.0	ug/kg dry	4	05/30/24 20:36	EPA 8270E		
Dibenzofuran	ND	---	13.0	ug/kg dry	4	05/30/24 20:36	EPA 8270E		
Pentachlorophenol (PCP)	ND	---	130	ug/kg dry	4	05/30/24 20:36	EPA 8270E		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 103 %</i>		<i>Limits: 37-122 %</i>		<i>4</i>	<i>05/30/24 20:36</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>				<i>88 %</i>		<i>44-120 %</i>	<i>4</i>	<i>05/30/24 20:36</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>				<i>95 %</i>		<i>33-122 %</i>	<i>4</i>	<i>05/30/24 20:36</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>				<i>103 %</i>		<i>54-127 %</i>	<i>4</i>	<i>05/30/24 20:36</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>				<i>90 %</i>		<i>35-120 %</i>	<i>4</i>	<i>05/30/24 20:36</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>				<i>97 %</i>		<i>39-132 %</i>	<i>4</i>	<i>05/30/24 20:36</i>	<i>EPA 8270E</i>
WS-SB-3-0.0-5.0 (A4E1574-15)			Matrix: Soil			Batch: 24E1016			
Acenaphthene	ND	---	3.72	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
Acenaphthylene	ND	---	3.72	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
Anthracene	ND	---	3.72	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
Benz(a)anthracene	ND	---	3.72	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
Benzo(a)pyrene	ND	---	5.58	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
Benzo(b)fluoranthene	ND	---	5.58	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
Benzo(k)fluoranthene	ND	---	5.58	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
Benzo(g,h,i)perylene	ND	---	3.72	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
Chrysene	ND	---	3.72	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
Dibenz(a,h)anthracene	ND	---	3.72	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
Fluoranthene	ND	---	3.72	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
Fluorene	ND	---	3.72	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
Indeno(1,2,3-cd)pyrene	ND	---	3.72	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
1-Methylnaphthalene	ND	---	7.43	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
2-Methylnaphthalene	ND	---	7.43	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
Naphthalene	ND	---	7.43	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
Phenanthrene	ND	---	3.72	ug/kg dry	1	05/30/24 17:11	EPA 8270E		
Pyrene	ND	---	3.72	ug/kg dry	1	05/30/24 17:11	EPA 8270E		

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-3-0.0-5.0 (A4E1574-15)				Matrix: Soil		Batch: 24E1016		
Dibenzofuran	ND	---	3.72	ug/kg dry	1	05/30/24 17:11	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	37.2	ug/kg dry	1	05/30/24 17:11	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 102 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>05/30/24 17:11</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>91 %</i>		<i>44-120 %</i>		<i>1</i>	<i>05/30/24 17:11</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>96 %</i>		<i>33-122 %</i>		<i>1</i>	<i>05/30/24 17:11</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>106 %</i>		<i>54-127 %</i>		<i>1</i>	<i>05/30/24 17:11</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>93 %</i>		<i>35-120 %</i>		<i>1</i>	<i>05/30/24 17:11</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>97 %</i>		<i>39-132 %</i>		<i>1</i>	<i>05/30/24 17:11</i>	<i>EPA 8270E</i>
WS-SB-3-5.0-8.0 (A4E1574-16)				Matrix: Soil		Batch: 24E1016		
Acenaphthene	ND	---	4.28	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Acenaphthylene	ND	---	4.28	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Anthracene	ND	---	4.28	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Benz(a)anthracene	ND	---	4.28	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Benzo(a)pyrene	ND	---	6.42	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Benzo(b)fluoranthene	ND	---	6.42	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Benzo(k)fluoranthene	ND	---	6.42	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	4.28	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Chrysene	ND	---	4.28	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	4.28	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Fluoranthene	ND	---	4.28	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Fluorene	ND	---	4.28	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	4.28	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
1-Methylnaphthalene	ND	---	8.55	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
2-Methylnaphthalene	ND	---	8.55	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Naphthalene	ND	---	8.55	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Phenanthrene	ND	---	4.28	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Pyrene	ND	---	4.28	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Dibenzofuran	ND	---	4.28	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	42.8	ug/kg dry	1	05/30/24 17:46	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>05/30/24 17:46</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>90 %</i>		<i>44-120 %</i>		<i>1</i>	<i>05/30/24 17:46</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>97 %</i>		<i>33-122 %</i>		<i>1</i>	<i>05/30/24 17:46</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>107 %</i>		<i>54-127 %</i>		<i>1</i>	<i>05/30/24 17:46</i>	<i>EPA 8270E</i>

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-3-5.0-8.0 (A4E1574-16)				Matrix: Soil		Batch: 24E1016		
<i>Surrogate: 2-Fluorophenol (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 35-120 %</i>		<i>1</i>	<i>05/30/24 17:46</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>100 %</i>		<i>39-132 %</i>		<i>1</i>	<i>05/30/24 17:46</i>	<i>EPA 8270E</i>
WS-SB-5-0.0-5.0 (A4E1574-17)				Matrix: Soil		Batch: 24E1016		
Acenaphthene	ND	---	3.58	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Acenaphthylene	ND	---	3.58	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Anthracene	ND	---	3.58	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Benz(a)anthracene	ND	---	3.58	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Benzo(a)pyrene	ND	---	5.36	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Benzo(b)fluoranthene	ND	---	5.36	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Benzo(k)fluoranthene	ND	---	5.36	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	3.58	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Chrysene	ND	---	3.58	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	3.58	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Fluoranthene	ND	---	3.58	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Fluorene	ND	---	3.58	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	3.58	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
1-Methylnaphthalene	ND	---	7.15	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
2-Methylnaphthalene	ND	---	7.15	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Naphthalene	ND	---	7.15	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Phenanthrene	ND	---	3.58	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Pyrene	ND	---	3.58	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Dibenzofuran	ND	---	3.58	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	35.8	ug/kg dry	1	05/30/24 18:20	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 118 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>05/30/24 18:20</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>93 %</i>		<i>44-120 %</i>		<i>1</i>	<i>05/30/24 18:20</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>116 %</i>		<i>33-122 %</i>		<i>1</i>	<i>05/30/24 18:20</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>107 %</i>		<i>54-127 %</i>		<i>1</i>	<i>05/30/24 18:20</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>103 %</i>		<i>35-120 %</i>		<i>1</i>	<i>05/30/24 18:20</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>93 %</i>		<i>39-132 %</i>		<i>1</i>	<i>05/30/24 18:20</i>	<i>EPA 8270E</i>
WS-SB-5-5.0-8.5 (A4E1574-18RE1)				Matrix: Soil		Batch: 24E1016		R-04
Acenaphthene	ND	---	37.4	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
Acenaphthylene	ND	---	37.4	ug/kg dry	10	05/30/24 18:55	EPA 8270E	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-5-5.0-8.5 (A4E1574-18RE1)				Matrix: Soil		Batch: 24E1016		R-04
Anthracene	ND	---	37.4	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
Benz(a)anthracene	ND	---	37.4	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
Benzo(a)pyrene	ND	---	56.0	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
Benzo(b)fluoranthene	ND	---	56.0	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
Benzo(k)fluoranthene	ND	---	56.0	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	37.4	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
Chrysene	ND	---	37.4	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	37.4	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
Fluoranthene	ND	---	37.4	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
Fluorene	ND	---	37.4	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	37.4	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
1-Methylnaphthalene	ND	---	74.7	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
2-Methylnaphthalene	ND	---	74.7	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
Naphthalene	ND	---	74.7	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
Phenanthrene	ND	---	37.4	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
Pyrene	ND	---	37.4	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
Dibenzofuran	ND	---	37.4	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	37.4	ug/kg dry	10	05/30/24 18:55	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 37-122 %</i>		<i>10</i>	<i>05/30/24 18:55</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>95 %</i>		<i>44-120 %</i>		<i>10</i>	<i>05/30/24 18:55</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>98 %</i>		<i>33-122 %</i>		<i>10</i>	<i>05/30/24 18:55</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>110 %</i>		<i>54-127 %</i>		<i>10</i>	<i>05/30/24 18:55</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>100 %</i>		<i>35-120 %</i>		<i>10</i>	<i>05/30/24 18:55</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>102 %</i>		<i>39-132 %</i>		<i>10</i>	<i>05/30/24 18:55</i>	<i>EPA 8270E</i>

WS-SB-10-0.0-3.0 (A4E1574-19RE1)				Matrix: Soil		Batch: 24E1016		
Acenaphthene	ND	---	4.75	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
Acenaphthylene	ND	---	4.75	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
Anthracene	ND	---	4.75	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
Benzo(a)anthracene	4.77	---	4.75	ug/kg dry	1	05/30/24 21:43	EPA 8270E	M-05
Benzo(a)pyrene	8.58	---	7.12	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
Benzo(b)fluoranthene	10.6	---	7.12	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
Benzo(k)fluoranthene	ND	---	7.12	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	4.75	ug/kg dry	1	05/30/24 21:43	EPA 8270E	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-10-0-0-3.0 (A4E1574-19RE1)				Matrix: Soil		Batch: 24E1016		
Chrysene	7.49	---	4.75	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	4.75	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
Fluoranthene	15.1	---	4.75	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
Fluorene	ND	---	4.75	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	4.75	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
1-Methylnaphthalene	ND	---	9.49	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
2-Methylnaphthalene	ND	---	9.49	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
Naphthalene	ND	---	9.49	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
Phenanthrene	8.83	---	4.75	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
Pyrene	14.4	---	4.75	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
Dibenzofuran	ND	---	4.75	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	47.5	ug/kg dry	1	05/30/24 21:43	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>05/30/24 21:43</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>94 %</i>		<i>44-120 %</i>		<i>1</i>	<i>05/30/24 21:43</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>104 %</i>		<i>33-122 %</i>		<i>1</i>	<i>05/30/24 21:43</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>109 %</i>		<i>54-127 %</i>		<i>1</i>	<i>05/30/24 21:43</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>95 %</i>		<i>35-120 %</i>		<i>1</i>	<i>05/30/24 21:43</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>98 %</i>		<i>39-132 %</i>		<i>1</i>	<i>05/30/24 21:43</i>	<i>EPA 8270E</i>
WS-SB-10-5-0-10.0 (A4E1574-20)				Matrix: Soil		Batch: 24E1016		R-04
Benzo(g,h,i)perylene	ND	---	53.5	ug/kg dry	10	05/30/24 13:44	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	53.5	ug/kg dry	10	05/30/24 13:44	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	53.5	ug/kg dry	10	05/30/24 13:44	EPA 8270E	
WS-SB-10-5-0-10.0 (A4E1574-20RE1)				Matrix: Soil		Batch: 24E1016		
Acenaphthene	ND	---	5.35	ug/kg dry	1	06/03/24 10:06	EPA 8270E	
Acenaphthylene	ND	---	5.35	ug/kg dry	1	06/03/24 10:06	EPA 8270E	
Anthracene	ND	---	5.35	ug/kg dry	1	06/03/24 10:06	EPA 8270E	
Benz(a)anthracene	ND	---	5.35	ug/kg dry	1	06/03/24 10:06	EPA 8270E	
Benzo(a)pyrene	9.65	---	8.02	ug/kg dry	1	06/03/24 10:06	EPA 8270E	
Benzo(b)fluoranthene	8.68	---	8.02	ug/kg dry	1	06/03/24 10:06	EPA 8270E	
Benzo(k)fluoranthene	ND	---	8.02	ug/kg dry	1	06/03/24 10:06	EPA 8270E	
Chrysene	ND	---	5.35	ug/kg dry	1	06/03/24 10:06	EPA 8270E	
Fluoranthene	ND	---	5.35	ug/kg dry	1	06/03/24 10:06	EPA 8270E	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
WS-SB-10-5.0-10.0 (A4E1574-20RE1)				Matrix: Soil		Batch: 24E1016			
Fluorene	ND	---	5.35	ug/kg dry	1	06/03/24 10:06	EPA 8270E		
1-Methylnaphthalene	ND	---	10.7	ug/kg dry	1	06/03/24 10:06	EPA 8270E		
2-Methylnaphthalene	ND	---	10.7	ug/kg dry	1	06/03/24 10:06	EPA 8270E		
Naphthalene	ND	---	10.7	ug/kg dry	1	06/03/24 10:06	EPA 8270E		
Phenanthrene	ND	---	5.35	ug/kg dry	1	06/03/24 10:06	EPA 8270E		
Pyrene	6.16	---	5.35	ug/kg dry	1	06/03/24 10:06	EPA 8270E		
Dibenzofuran	ND	---	5.35	ug/kg dry	1	06/03/24 10:06	EPA 8270E		
Pentachlorophenol (PCP)	ND	---	53.5	ug/kg dry	1	06/03/24 10:06	EPA 8270E		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 116 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>06/03/24 10:06</i>	<i>EPA 8270E</i>	<i>Q-41</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>85 %</i>		<i>44-120 %</i>		<i>1</i>	<i>06/03/24 10:06</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>107 %</i>		<i>33-122 %</i>		<i>1</i>	<i>06/03/24 10:06</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>		<i>81 %</i>		<i>54-127 %</i>		<i>1</i>	<i>06/03/24 10:06</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>97 %</i>		<i>35-120 %</i>		<i>1</i>	<i>06/03/24 10:06</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>103 %</i>		<i>39-132 %</i>		<i>1</i>	<i>06/03/24 10:06</i>	<i>EPA 8270E</i>	
WS-RS-1-0-1 (A4E1574-21RE1)				Matrix: Soil		Batch: 24E1016			
Acenaphthene	ND	---	21.9	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
Acenaphthylene	ND	---	21.9	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
Anthracene	ND	---	21.9	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
Benz(a)anthracene	22.1	---	21.9	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
Benzo(a)pyrene	42.6	---	32.8	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
Benzo(b)fluoranthene	40.2	---	32.8	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
Benzo(k)fluoranthene	ND	---	32.8	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
Benzo(g,h,i)perylene	ND	---	21.9	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
Chrysene	ND	---	21.9	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
Dibenz(a,h)anthracene	ND	---	21.9	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
Fluoranthene	35.9	---	21.9	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
Fluorene	ND	---	21.9	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
Indeno(1,2,3-cd)pyrene	ND	---	21.9	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
1-Methylnaphthalene	ND	---	43.8	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
2-Methylnaphthalene	ND	---	43.8	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
Naphthalene	ND	---	43.8	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
Phenanthrene	ND	---	21.9	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
Pyrene	39.5	---	21.9	ug/kg dry	4	05/30/24 21:10	EPA 8270E		

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
WS-RS-1-0-1 (A4E1574-21RE1)			Matrix: Soil		Batch: 24E1016				
Dibenzofuran	ND	---	21.9	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
Pentachlorophenol (PCP)	ND	---	219	ug/kg dry	4	05/30/24 21:10	EPA 8270E		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 37-122 %</i>		<i>4</i>	<i>05/30/24 21:10</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>		<i>80 %</i>		<i>44-120 %</i>		<i>4</i>	<i>05/30/24 21:10</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>91 %</i>		<i>33-122 %</i>		<i>4</i>	<i>05/30/24 21:10</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>		<i>96 %</i>		<i>54-127 %</i>		<i>4</i>	<i>05/30/24 21:10</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>83 %</i>		<i>35-120 %</i>		<i>4</i>	<i>05/30/24 21:10</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>90 %</i>		<i>39-132 %</i>		<i>4</i>	<i>05/30/24 21:10</i>	<i>EPA 8270E</i>	
WS-RS-1-2-3 (A4E1574-22RE1)			Matrix: Soil		Batch: 24E1016				R-04
Acenaphthene	ND	---	22.9	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Acenaphthylene	ND	---	22.9	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Anthracene	ND	---	22.9	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Benz(a)anthracene	ND	---	22.9	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Benzo(a)pyrene	ND	---	34.4	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Benzo(b)fluoranthene	ND	---	34.4	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Benzo(k)fluoranthene	ND	---	34.4	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Benzo(g,h,i)perylene	ND	---	22.9	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Chrysene	ND	---	22.9	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Dibenz(a,h)anthracene	ND	---	22.9	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Fluoranthene	ND	---	22.9	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Fluorene	ND	---	22.9	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Indeno(1,2,3-cd)pyrene	ND	---	22.9	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
1-Methylnaphthalene	ND	---	45.8	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
2-Methylnaphthalene	ND	---	45.8	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Naphthalene	ND	---	45.8	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Phenanthrene	ND	---	22.9	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Pyrene	ND	---	22.9	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Dibenzofuran	ND	---	22.9	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
Pentachlorophenol (PCP)	ND	---	229	ug/kg dry	4	06/03/24 10:40	EPA 8270E		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 103 %</i>		<i>Limits: 37-122 %</i>		<i>4</i>	<i>06/03/24 10:40</i>	<i>EPA 8270E</i>	<i>Q-41</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>73 %</i>		<i>44-120 %</i>		<i>4</i>	<i>06/03/24 10:40</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>105 %</i>		<i>33-122 %</i>		<i>4</i>	<i>06/03/24 10:40</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>		<i>76 %</i>		<i>54-127 %</i>		<i>4</i>	<i>06/03/24 10:40</i>	<i>EPA 8270E</i>	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-RS-1-2-3 (A4E1574-22RE1)				Matrix: Soil		Batch: 24E1016		R-04
<i>Surrogate: 2-Fluorophenol (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 35-120 %</i>		<i>4 06/03/24 10:40 EPA 8270E</i>		
<i>2,4,6-Tribromophenol (Surr)</i>		<i>95 %</i>		<i>39-132 %</i>		<i>4 06/03/24 10:40 EPA 8270E</i>		
WS-RS-2-0-1 (A4E1574-23RE1)				Matrix: Soil		Batch: 24E1016		
Acenaphthene	ND	---	16.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Acenaphthylene	ND	---	16.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Anthracene	ND	---	16.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Benz(a)anthracene	19.4	---	16.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Benzo(a)pyrene	36.6	---	24.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Benzo(b)fluoranthene	30.4	---	24.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Benzo(k)fluoranthene	ND	---	24.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Benzo(g,h,i)perylene	19.6	---	16.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Chrysene	23.6	---	16.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	16.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Fluoranthene	28.8	---	16.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Fluorene	ND	---	16.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	16.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
1-Methylnaphthalene	ND	---	32.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
2-Methylnaphthalene	ND	---	32.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Naphthalene	ND	---	32.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Phenanthrene	17.8	---	16.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Pyrene	42.5	---	16.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Dibenzofuran	ND	---	16.1	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	161	ug/kg dry	4	06/03/24 11:15	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 116 %</i>		<i>Limits: 37-122 %</i>		<i>4 06/03/24 11:15 EPA 8270E</i>		<i>Q-41</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>94 %</i>		<i>44-120 %</i>		<i>4 06/03/24 11:15 EPA 8270E</i>		
<i>Phenol-d6 (Surr)</i>		<i>114 %</i>		<i>33-122 %</i>		<i>4 06/03/24 11:15 EPA 8270E</i>		
<i>p-Terphenyl-d14 (Surr)</i>		<i>102 %</i>		<i>54-127 %</i>		<i>4 06/03/24 11:15 EPA 8270E</i>		
<i>2-Fluorophenol (Surr)</i>		<i>99 %</i>		<i>35-120 %</i>		<i>4 06/03/24 11:15 EPA 8270E</i>		
<i>2,4,6-Tribromophenol (Surr)</i>		<i>102 %</i>		<i>39-132 %</i>		<i>4 06/03/24 11:15 EPA 8270E</i>		
WS-RS-2-0-1-DUP (A4E1574-24)				Matrix: Soil		Batch: 24E1016		
Acenaphthene	ND	---	148	ug/kg dry	40	05/29/24 21:10	EPA 8270E	
Acenaphthylene	ND	---	148	ug/kg dry	40	05/29/24 21:10	EPA 8270E	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
WS-RS-2-0-1-DUP (A4E1574-24)				Matrix: Soil		Batch: 24E1016			
Anthracene	ND	---	148	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
Benz(a)anthracene	187	---	148	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
Benzo(a)pyrene	405	---	221	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
Benzo(b)fluoranthene	337	---	221	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
Benzo(k)fluoranthene	ND	---	221	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
Benzo(g,h,i)perylene	235	---	148	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
Chrysene	227	---	148	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
Dibenz(a,h)anthracene	ND	---	148	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
Fluoranthene	375	---	148	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
Fluorene	ND	---	148	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
Indeno(1,2,3-cd)pyrene	192	---	148	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
1-Methylnaphthalene	ND	---	295	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
2-Methylnaphthalene	ND	---	295	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
Naphthalene	ND	---	295	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
Phenanthrene	155	---	148	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
Pyrene	476	---	148	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
Dibenzofuran	ND	---	148	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
Pentachlorophenol (PCP)	ND	---	1480	ug/kg dry	40	05/29/24 21:10	EPA 8270E		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 91 %</i>		<i>Limits: 37-122 %</i>		<i>40</i>	<i>05/29/24 21:10</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>86 %</i>		<i>44-120 %</i>		<i>40</i>	<i>05/29/24 21:10</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>Phenol-d6 (Surr)</i>		<i>72 %</i>		<i>33-122 %</i>		<i>40</i>	<i>05/29/24 21:10</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>103 %</i>		<i>54-127 %</i>		<i>40</i>	<i>05/29/24 21:10</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>2-Fluorophenol (Surr)</i>		<i>89 %</i>		<i>35-120 %</i>		<i>40</i>	<i>05/29/24 21:10</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>141 %</i>		<i>39-132 %</i>		<i>40</i>	<i>05/29/24 21:10</i>	<i>EPA 8270E</i>	<i>S-05</i>

WS-RS-2-2-3 (A4E1574-25RE1)				Matrix: Soil		Batch: 24E1016		R-04
Acenaphthene	ND	---	37.7	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
Acenaphthylene	ND	---	37.7	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
Anthracene	ND	---	37.7	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
Benz(a)anthracene	ND	---	37.7	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
Benzo(a)pyrene	ND	---	56.5	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
Benzo(b)fluoranthene	ND	---	56.5	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
Benzo(k)fluoranthene	ND	---	56.5	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	37.7	ug/kg dry	10	05/30/24 19:30	EPA 8270E	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-RS-2-2-3 (A4E1574-25RE1)			Matrix: Soil		Batch: 24E1016		R-04	
Chrysene	ND	---	37.7	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	37.7	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
Fluoranthene	ND	---	37.7	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
Fluorene	ND	---	37.7	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	37.7	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
1-Methylnaphthalene	ND	---	75.3	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
2-Methylnaphthalene	ND	---	75.3	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
Naphthalene	ND	---	75.3	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
Phenanthrene	ND	---	37.7	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
Pyrene	ND	---	37.7	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
Dibenzofuran	ND	---	37.7	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	377	ug/kg dry	10	05/30/24 19:30	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 99 %</i>		<i>Limits: 37-122 %</i>		<i>10</i>	<i>05/30/24 19:30</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>92 %</i>		<i>44-120 %</i>		<i>10</i>	<i>05/30/24 19:30</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>91 %</i>		<i>33-122 %</i>		<i>10</i>	<i>05/30/24 19:30</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>103 %</i>		<i>54-127 %</i>		<i>10</i>	<i>05/30/24 19:30</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>93 %</i>		<i>35-120 %</i>		<i>10</i>	<i>05/30/24 19:30</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>90 %</i>		<i>39-132 %</i>		<i>10</i>	<i>05/30/24 19:30</i>	<i>EPA 8270E</i>
WS-RS-3-0-1 (A4E1574-26RE2)			Matrix: Soil		Batch: 24E1016		R-04	
Acenaphthene	ND	---	16.4	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Acenaphthylene	ND	---	16.4	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Anthracene	ND	---	16.4	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Benz(a)anthracene	ND	---	16.4	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Benzo(a)pyrene	ND	---	24.5	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Benzo(b)fluoranthene	ND	---	24.5	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Benzo(k)fluoranthene	ND	---	24.5	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	16.4	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Chrysene	ND	---	16.4	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	16.4	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Fluoranthene	ND	---	16.4	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Fluorene	ND	---	16.4	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	16.4	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
1-Methylnaphthalene	ND	---	32.7	ug/kg dry	4	06/03/24 11:50	EPA 8270E	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
---	---	---

ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-RS-3-0-1 (A4E1574-26RE2)				Matrix: Soil		Batch: 24E1016		R-04
2-Methylnaphthalene	ND	---	32.7	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Naphthalene	ND	---	32.7	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Phenanthrene	ND	---	16.4	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Pyrene	ND	---	16.4	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Dibenzofuran	ND	---	16.4	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	164	ug/kg dry	4	06/03/24 11:50	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 103 %</i>		<i>Limits: 37-122 %</i>	4	06/03/24 11:50	EPA 8270E	<i>Q-41</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>85 %</i>		<i>44-120 %</i>	4	06/03/24 11:50	EPA 8270E	
<i>Phenol-d6 (Surr)</i>		<i>103 %</i>		<i>33-122 %</i>	4	06/03/24 11:50	EPA 8270E	
<i>p-Terphenyl-d14 (Surr)</i>		<i>97 %</i>		<i>54-127 %</i>	4	06/03/24 11:50	EPA 8270E	
<i>2-Fluorophenol (Surr)</i>		<i>90 %</i>		<i>35-120 %</i>	4	06/03/24 11:50	EPA 8270E	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>97 %</i>		<i>39-132 %</i>	4	06/03/24 11:50	EPA 8270E	
WS-RS-3-2-3 (A4E1574-27RE2)				Matrix: Soil		Batch: 24E1016		
Acenaphthene	ND	---	4.18	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Acenaphthylene	ND	---	4.18	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Anthracene	ND	---	4.18	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Benz(a)anthracene	6.47	---	4.18	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Benzo(a)pyrene	10.7	---	6.26	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Benzo(b)fluoranthene	10.9	---	6.26	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Benzo(k)fluoranthene	ND	---	6.26	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Benzo(g,h,i)perylene	11.7	---	4.18	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Chrysene	7.35	---	4.18	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	4.18	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Fluoranthene	12.0	---	4.18	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Fluorene	ND	---	4.18	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Indeno(1,2,3-cd)pyrene	8.76	---	4.18	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
1-Methylnaphthalene	ND	---	8.35	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
2-Methylnaphthalene	ND	---	8.35	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Naphthalene	ND	---	8.35	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Phenanthrene	8.50	---	4.18	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Pyrene	13.2	---	4.18	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Dibenzofuran	ND	---	4.18	ug/kg dry	1	05/29/24 17:33	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	41.8	ug/kg dry	1	05/29/24 17:33	EPA 8270E	

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ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-RS-3-2-3 (A4E1574-27RE2)			Matrix: Soil			Batch: 24E1016		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>			<i>Recovery: 101 %</i>	<i>Limits: 37-122 %</i>	<i>1</i>	<i>05/29/24 17:33</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>			<i>94 %</i>	<i>44-120 %</i>	<i>1</i>	<i>05/29/24 17:33</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>			<i>118 %</i>	<i>33-122 %</i>	<i>1</i>	<i>05/29/24 17:33</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>			<i>103 %</i>	<i>54-127 %</i>	<i>1</i>	<i>05/29/24 17:33</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>			<i>105 %</i>	<i>35-120 %</i>	<i>1</i>	<i>05/29/24 17:33</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>			<i>110 %</i>	<i>39-132 %</i>	<i>1</i>	<i>05/29/24 17:33</i>	<i>EPA 8270E</i>	
WS-SB-5-GW-10-20 (A4E1574-34)			Matrix: Water			Batch: 24E0999		
Acenaphthene	0.0248	---	0.0198	ug/L	1	05/29/24 19:29	EPA 8270E	
Acenaphthylene	ND	---	0.0198	ug/L	1	05/29/24 19:29	EPA 8270E	
Anthracene	0.0198	---	0.0198	ug/L	1	05/29/24 19:29	EPA 8270E	
Benz(a)anthracene	ND	---	0.0198	ug/L	1	05/29/24 19:29	EPA 8270E	
Benzo(a)pyrene	ND	---	0.0297	ug/L	1	05/29/24 19:29	EPA 8270E	
Benzo(b)fluoranthene	ND	---	0.0297	ug/L	1	05/29/24 19:29	EPA 8270E	
Benzo(k)fluoranthene	ND	---	0.0297	ug/L	1	05/29/24 19:29	EPA 8270E	
Chrysene	ND	---	0.0198	ug/L	1	05/29/24 19:29	EPA 8270E	
Fluoranthene	ND	---	0.0198	ug/L	1	05/29/24 19:29	EPA 8270E	
Fluorene	0.0251	---	0.0198	ug/L	1	05/29/24 19:29	EPA 8270E	
1-Methylnaphthalene	0.0431	---	0.0396	ug/L	1	05/29/24 19:29	EPA 8270E	
2-Methylnaphthalene	ND	---	0.0396	ug/L	1	05/29/24 19:29	EPA 8270E	
Naphthalene	0.126	---	0.0396	ug/L	1	05/29/24 19:29	EPA 8270E	
Phenanthrene	0.0518	---	0.0198	ug/L	1	05/29/24 19:29	EPA 8270E	
Pyrene	0.0337	---	0.0198	ug/L	1	05/29/24 19:29	EPA 8270E	
Dibenzofuran	ND	---	0.0198	ug/L	1	05/29/24 19:29	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	0.198	ug/L	1	05/29/24 19:29	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>			<i>Recovery: 90 %</i>	<i>Limits: 44-120 %</i>	<i>1</i>	<i>05/29/24 19:29</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>			<i>63 %</i>	<i>44-120 %</i>	<i>1</i>	<i>05/29/24 19:29</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>			<i>30 %</i>	<i>10-133 %</i>	<i>1</i>	<i>05/29/24 19:29</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>			<i>74 %</i>	<i>50-134 %</i>	<i>1</i>	<i>05/29/24 19:29</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>			<i>46 %</i>	<i>19-120 %</i>	<i>1</i>	<i>05/29/24 19:29</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>			<i>102 %</i>	<i>43-140 %</i>	<i>1</i>	<i>05/29/24 19:29</i>	<i>EPA 8270E</i>	
WS-SB-5-GW-10-20 (A4E1574-34RE1)			Matrix: Water			Batch: 24E0999		R-04
Benzo(g,h,i)perylene	ND	---	0.198	ug/L	10	05/30/24 22:16	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	0.198	ug/L	10	05/30/24 22:16	EPA 8270E	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-5-GW-10-20 (A4E1574-34RE1)				Matrix: Water		Batch: 24E0999		R-04
Indeno(1,2,3-cd)pyrene	ND	---	0.198	ug/L	10	05/30/24 22:16	EPA 8270E	

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
WS-SB-6-GW-10-15 (A4E1574-01)		Matrix: Water							
Batch: 24F0030									
Arsenic	1.47	---	1.00	ug/L	1	06/03/24 18:34	EPA 6020B		
Barium	76.8	---	2.00	ug/L	1	06/03/24 18:34	EPA 6020B		
Cadmium	ND	---	0.200	ug/L	1	06/03/24 18:34	EPA 6020B		
Chromium	2.27	---	2.00	ug/L	1	06/03/24 18:34	EPA 6020B		
Lead	ND	---	0.200	ug/L	1	06/03/24 18:34	EPA 6020B		
Mercury	ND	---	0.0800	ug/L	1	06/03/24 18:34	EPA 6020B		
Selenium	ND	---	1.00	ug/L	1	06/03/24 18:34	EPA 6020B		
Silver	ND	---	0.200	ug/L	1	06/03/24 18:34	EPA 6020B		
WS-SB-1-GW-5-15 (A4E1574-02)		Matrix: Water							
Batch: 24F0030									
Arsenic	ND	---	1.00	ug/L	1	06/03/24 18:40	EPA 6020B		
Barium	ND	---	2.00	ug/L	1	06/03/24 18:40	EPA 6020B		
Cadmium	ND	---	0.200	ug/L	1	06/03/24 18:40	EPA 6020B		
Chromium	ND	---	2.00	ug/L	1	06/03/24 18:40	EPA 6020B		
Lead	ND	---	0.200	ug/L	1	06/03/24 18:40	EPA 6020B		
Mercury	ND	---	0.0800	ug/L	1	06/03/24 18:40	EPA 6020B		
Selenium	ND	---	1.00	ug/L	1	06/03/24 18:40	EPA 6020B		
Silver	ND	---	0.200	ug/L	1	06/03/24 18:40	EPA 6020B		
WS-SB-3-GW-10-20 (A4E1574-03)		Matrix: Water							
Batch: 24F0030									
Arsenic	1.61	---	1.00	ug/L	1	06/03/24 18:57	EPA 6020B		
Barium	33.6	---	2.00	ug/L	1	06/03/24 18:57	EPA 6020B		
Cadmium	ND	---	0.200	ug/L	1	06/03/24 18:57	EPA 6020B		
Chromium	ND	---	2.00	ug/L	1	06/03/24 18:57	EPA 6020B		
Lead	ND	---	0.200	ug/L	1	06/03/24 18:57	EPA 6020B		
Mercury	ND	---	0.0800	ug/L	1	06/03/24 18:57	EPA 6020B		
Selenium	ND	---	1.00	ug/L	1	06/03/24 18:57	EPA 6020B		
Silver	ND	---	0.200	ug/L	1	06/03/24 18:57	EPA 6020B		
WS-SB-3-GW-10-20-DUP (A4E1574-04)		Matrix: Water							
Batch: 24F0030									

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
---	---	---

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
WS-SB-3-GW-10-20-DUP (A4E1574-04)		Matrix: Water							
Arsenic	1.62	---	1.00	ug/L	1	06/03/24 19:02	EPA 6020B		
Barium	32.8	---	2.00	ug/L	1	06/03/24 19:02	EPA 6020B		
Cadmium	ND	---	0.200	ug/L	1	06/03/24 19:02	EPA 6020B		
Chromium	ND	---	2.00	ug/L	1	06/03/24 19:02	EPA 6020B		
Lead	ND	---	0.200	ug/L	1	06/03/24 19:02	EPA 6020B		
Mercury	ND	---	0.0800	ug/L	1	06/03/24 19:02	EPA 6020B		
Selenium	ND	---	1.00	ug/L	1	06/03/24 19:02	EPA 6020B		
Silver	ND	---	0.200	ug/L	1	06/03/24 19:02	EPA 6020B		
WS-RS-EB-20240522 (A4E1574-07)		Matrix: Water							
Batch: 24F0030									
Arsenic	ND	---	1.00	ug/L	1	06/03/24 19:08	EPA 6020B		
Barium	ND	---	2.00	ug/L	1	06/03/24 19:08	EPA 6020B		
Cadmium	ND	---	0.200	ug/L	1	06/03/24 19:08	EPA 6020B		
Chromium	ND	---	2.00	ug/L	1	06/03/24 19:08	EPA 6020B		
Lead	ND	---	0.200	ug/L	1	06/03/24 19:08	EPA 6020B		
Mercury	ND	---	0.0800	ug/L	1	06/03/24 19:08	EPA 6020B		
Selenium	ND	---	1.00	ug/L	1	06/03/24 19:08	EPA 6020B		
Silver	ND	---	0.200	ug/L	1	06/03/24 19:08	EPA 6020B		
WS-RS-1-0-1 (A4E1574-21)		Matrix: Soil							
Batch: 24E0996									
Arsenic	6.19	---	2.04	mg/kg dry	10	05/30/24 20:26	EPA 6020B		
Barium	50.9	---	2.04	mg/kg dry	10	05/30/24 20:26	EPA 6020B		
Cadmium	ND	---	0.409	mg/kg dry	10	05/30/24 20:26	EPA 6020B		
Chromium	21.5	---	2.04	mg/kg dry	10	05/30/24 20:26	EPA 6020B		
Lead	19.7	---	0.409	mg/kg dry	10	05/30/24 20:26	EPA 6020B		
Mercury	ND	---	0.163	mg/kg dry	10	05/30/24 20:26	EPA 6020B		
Selenium	ND	---	2.04	mg/kg dry	10	05/30/24 20:26	EPA 6020B		
Silver	ND	---	0.409	mg/kg dry	10	05/30/24 20:26	EPA 6020B		
WS-RS-1-2-3 (A4E1574-22)		Matrix: Soil							
Batch: 24E0996									
Arsenic	6.50	---	2.46	mg/kg dry	10	05/30/24 20:33	EPA 6020B		

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-RS-1-2-3 (A4E1574-22) Matrix: Soil								
Barium	31.7	---	2.46	mg/kg dry	10	05/30/24 20:33	EPA 6020B	
Cadmium	ND	---	0.491	mg/kg dry	10	05/30/24 20:33	EPA 6020B	
Chromium	16.3	---	2.46	mg/kg dry	10	05/30/24 20:33	EPA 6020B	
Lead	6.79	---	0.491	mg/kg dry	10	05/30/24 20:33	EPA 6020B	
Mercury	ND	---	0.196	mg/kg dry	10	05/30/24 20:33	EPA 6020B	
Selenium	ND	---	2.46	mg/kg dry	10	05/30/24 20:33	EPA 6020B	
Silver	ND	---	0.491	mg/kg dry	10	05/30/24 20:33	EPA 6020B	
WS-RS-2-0-1 (A4E1574-23) Matrix: Soil								
Batch: 24E0996								
Arsenic	5.37	---	1.68	mg/kg dry	10	05/30/24 20:53	EPA 6020B	
Barium	21.3	---	1.68	mg/kg dry	10	05/30/24 20:53	EPA 6020B	
Cadmium	ND	---	0.336	mg/kg dry	10	05/30/24 20:53	EPA 6020B	
Chromium	21.2	---	1.68	mg/kg dry	10	05/30/24 20:53	EPA 6020B	
Lead	15.2	---	0.336	mg/kg dry	10	05/30/24 20:53	EPA 6020B	
Mercury	ND	---	0.134	mg/kg dry	10	05/30/24 20:53	EPA 6020B	
Selenium	ND	---	1.68	mg/kg dry	10	05/30/24 20:53	EPA 6020B	
Silver	ND	---	0.336	mg/kg dry	10	05/30/24 20:53	EPA 6020B	
WS-RS-2-0-1-DUP (A4E1574-24) Matrix: Soil								
Batch: 24E0996								
Arsenic	6.09	---	1.42	mg/kg dry	10	05/30/24 21:00	EPA 6020B	
Barium	17.5	---	1.42	mg/kg dry	10	05/30/24 21:00	EPA 6020B	
Cadmium	ND	---	0.285	mg/kg dry	10	05/30/24 21:00	EPA 6020B	
Chromium	29.4	---	1.42	mg/kg dry	10	05/30/24 21:00	EPA 6020B	
Lead	21.9	---	0.285	mg/kg dry	10	05/30/24 21:00	EPA 6020B	
Mercury	ND	---	0.114	mg/kg dry	10	05/30/24 21:00	EPA 6020B	
Selenium	ND	---	1.42	mg/kg dry	10	05/30/24 21:00	EPA 6020B	
Silver	ND	---	0.285	mg/kg dry	10	05/30/24 21:00	EPA 6020B	
WS-RS-2-2-3 (A4E1574-25) Matrix: Soil								
Batch: 24E0996								
Arsenic	9.42	---	1.59	mg/kg dry	10	05/30/24 21:07	EPA 6020B	
Barium	40.3	---	1.59	mg/kg dry	10	05/30/24 21:07	EPA 6020B	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-RS-2-2-3 (A4E1574-25) Matrix: Soil								
Cadmium	ND	---	0.318	mg/kg dry	10	05/30/24 21:07	EPA 6020B	
Chromium	16.4	---	1.59	mg/kg dry	10	05/30/24 21:07	EPA 6020B	
Lead	29.3	---	0.318	mg/kg dry	10	05/30/24 21:07	EPA 6020B	
Mercury	ND	---	0.127	mg/kg dry	10	05/30/24 21:07	EPA 6020B	
Selenium	ND	---	1.59	mg/kg dry	10	05/30/24 21:07	EPA 6020B	
Silver	ND	---	0.318	mg/kg dry	10	05/30/24 21:07	EPA 6020B	
WS-RS-3-0-1 (A4E1574-26) Matrix: Soil								
Batch: 24E0996								
Arsenic	4.23	---	1.58	mg/kg dry	10	05/30/24 21:13	EPA 6020B	
Barium	25.3	---	1.58	mg/kg dry	10	05/30/24 21:13	EPA 6020B	
Cadmium	ND	---	0.317	mg/kg dry	10	05/30/24 21:13	EPA 6020B	
Chromium	18.2	---	1.58	mg/kg dry	10	05/30/24 21:13	EPA 6020B	
Lead	9.66	---	0.317	mg/kg dry	10	05/30/24 21:13	EPA 6020B	
Mercury	ND	---	0.127	mg/kg dry	10	05/30/24 21:13	EPA 6020B	
Selenium	ND	---	1.58	mg/kg dry	10	05/30/24 21:13	EPA 6020B	
Silver	ND	---	0.317	mg/kg dry	10	05/30/24 21:13	EPA 6020B	
WS-RS-3-2-3 (A4E1574-27) Matrix: Soil								
Batch: 24E0996								
Arsenic	6.22	---	1.78	mg/kg dry	10	05/30/24 21:20	EPA 6020B	
Barium	47.4	---	1.78	mg/kg dry	10	05/30/24 21:20	EPA 6020B	
Cadmium	ND	---	0.356	mg/kg dry	10	05/30/24 21:20	EPA 6020B	
Chromium	18.1	---	1.78	mg/kg dry	10	05/30/24 21:20	EPA 6020B	
Lead	7.88	---	0.356	mg/kg dry	10	05/30/24 21:20	EPA 6020B	
Mercury	ND	---	0.142	mg/kg dry	10	05/30/24 21:20	EPA 6020B	
Selenium	ND	---	1.78	mg/kg dry	10	05/30/24 21:20	EPA 6020B	
Silver	ND	---	0.356	mg/kg dry	10	05/30/24 21:20	EPA 6020B	
WS-SB-5-GW-10-20 (A4E1574-34) Matrix: Water								
Batch: 24F0030								
Arsenic	2.20	---	1.00	ug/L	1	06/03/24 19:14	EPA 6020B	
Cadmium	ND	---	0.200	ug/L	1	06/03/24 19:14	EPA 6020B	
Chromium	ND	---	2.00	ug/L	1	06/03/24 19:14	EPA 6020B	

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ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-5-GW-10-20 (A4E1574-34)				Matrix: Water				
Lead	ND	---	0.200	ug/L	1	06/03/24 19:14	EPA 6020B	
Mercury	ND	---	0.0800	ug/L	1	06/03/24 19:14	EPA 6020B	
Selenium	1.29	---	1.00	ug/L	1	06/03/24 19:14	EPA 6020B	
Silver	ND	---	0.200	ug/L	1	06/03/24 19:14	EPA 6020B	
WS-SB-5-GW-10-20 (A4E1574-34RE1)				Matrix: Water				
Batch: 24F0030								
Barium	312	---	20.0	ug/L	10	06/04/24 16:09	EPA 6020B	

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ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight									
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
WS-SB-2-0.0-5.0 (A4E1574-08)				Matrix: Soil		Batch: 24E0959			
% Solids	71.2	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-SB-2-5.0-7.0 (A4E1574-09)				Matrix: Soil		Batch: 24E0959			
% Solids	69.5	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-SB-4-0.0-5.0 (A4E1574-10)				Matrix: Soil		Batch: 24E0959			
% Solids	69.4	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-SB-4-5.0-9.0 (A4E1574-11)				Matrix: Soil		Batch: 24E0959			
% Solids	64.4	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-SB-1-0.0-3.0 (A4E1574-12)				Matrix: Soil		Batch: 24E0959			
% Solids	80.9	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-SB-1-0.0-3.0-DUP (A4E1574-13)				Matrix: Soil		Batch: 24E0959			
% Solids	87.8	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-SB-1-5.0-8.0 (A4E1574-14)				Matrix: Soil		Batch: 24E0959			
% Solids	81.4	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-SB-3-0.0-5.0 (A4E1574-15)				Matrix: Soil		Batch: 24E0959			
% Solids	71.1	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-SB-3-5.0-8.0 (A4E1574-16)				Matrix: Soil		Batch: 24E0959			
% Solids	61.8	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-SB-5-0.0-5.0 (A4E1574-17)				Matrix: Soil		Batch: 24E0959			
% Solids	71.9	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-SB-5-5.0-8.5 (A4E1574-18)				Matrix: Soil		Batch: 24E0959			
% Solids	70.6	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-SB-10-0.0-3.0 (A4E1574-19)				Matrix: Soil		Batch: 24E0959			
% Solids	55.6	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-SB-10-5.0-10.0 (A4E1574-20)				Matrix: Soil		Batch: 24E0959			

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ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight									
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
WS-SB-10-5.0-10.0 (A4E1574-20)				Matrix: Soil		Batch: 24E0959			
% Solids	48.4	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-RS-1-0-1 (A4E1574-21)				Matrix: Soil		Batch: 24E0959			
% Solids	48.6	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-RS-1-2-3 (A4E1574-22)				Matrix: Soil		Batch: 24E0959			
% Solids	44.5	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-RS-2-0-1 (A4E1574-23)				Matrix: Soil		Batch: 24E0959			
% Solids	62.9	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-RS-2-0-1-DUP (A4E1574-24)				Matrix: Soil		Batch: 24E0959			
% Solids	72.1	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-RS-2-2-3 (A4E1574-25)				Matrix: Soil		Batch: 24E0959			
% Solids	67.7	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-RS-3-0-1 (A4E1574-26)				Matrix: Soil		Batch: 24E0959			
% Solids	62.1	---	1.00	%	1	05/29/24 07:35	EPA 8000D		
WS-RS-3-2-3 (A4E1574-27)				Matrix: Soil		Batch: 24E0959			
% Solids	62.1	---	1.00	%	1	05/29/24 07:35	EPA 8000D		

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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QUALITY CONTROL (QC) SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0968 - EPA 3546 (Fuels)						Soil						
Blank (24E0968-BLK1)						Prepared: 05/28/24 10:24 Analyzed: 05/28/24 19:14						
<u>NWTPH-HCID</u>												
Gasoline Range Organics	ND	---	20.0	mg/kg wet	1	---	---	---	---	---	---	
Diesel Range Organics	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Oil Range Organics	ND	---	100	mg/kg wet	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>94 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (24E0968-DUP1)						Prepared: 05/28/24 10:24 Analyzed: 05/29/24 02:38						
<u>QC Source Sample: Non-SDG (A4E1569-09)</u>												
Gasoline Range Organics	ND	---	21.4	mg/kg dry	1	---	ND	---	---	---	30%	
Diesel Range Organics	ND	---	53.5	mg/kg dry	1	---	ND	---	---	---	30%	
Oil Range Organics	ND	---	107	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 100 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (24E0968-DUP2)						Prepared: 05/28/24 10:24 Analyzed: 05/28/24 23:32						
<u>QC Source Sample: Non-SDG (A4E1589-05)</u>												
Gasoline Range Organics	ND	---	24.1	mg/kg dry	1	---	ND	---	---	---	30%	
Diesel Range Organics	ND	---	60.1	mg/kg dry	1	---	ND	---	---	---	30%	
Oil Range Organics	ND	---	120	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 106 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>86 %</i>		<i>50-150 %</i>		<i>"</i>						
Batch 24E0969 - EPA 3546 (Fuels)						Soil						
Blank (24E0969-BLK1)						Prepared: 05/28/24 10:25 Analyzed: 05/29/24 06:08						
<u>NWTPH-HCID</u>												
Gasoline Range Organics	ND	---	20.0	mg/kg wet	1	---	---	---	---	---	---	
Diesel Range Organics	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Oil Range Organics	ND	---	100	mg/kg wet	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 68 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>67 %</i>		<i>50-150 %</i>		<i>"</i>						

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
---	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0969 - EPA 3546 (Fuels)						Soil						
Duplicate (24E0969-DUP1)			Prepared: 05/28/24 10:25 Analyzed: 05/29/24 06:55									
QC Source Sample: Non-SDG (A4E1573-03)												
Gasoline Range Organics	ND	---	20.0	mg/kg dry	1	---	ND	---	---	---	30%	
Diesel Range Organics	ND	---	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil Range Organics	ND	---	100	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 69 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>68 %</i>		<i>50-150 %</i>		<i>"</i>						

Duplicate (24E0969-DUP2)			Prepared: 05/28/24 10:25 Analyzed: 05/29/24 11:12									
QC Source Sample: WS-SB-5-0.0-5.0 (A4E1574-17)												
NWTPH-HCID												
Gasoline Range Organics	ND	---	27.0	mg/kg dry	1	---	ND	---	---	---	30%	
Diesel Range Organics	ND	---	67.5	mg/kg dry	1	---	ND	---	---	---	30%	
Oil Range Organics	ND	---	135	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 70 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>67 %</i>		<i>50-150 %</i>		<i>"</i>						

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---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E1027 - EPA 3510C (Fuels/Acid Ext.)						Water						
Blank (24E1027-BLK1)			Prepared: 05/29/24 12:03 Analyzed: 05/29/24 21:38									
<u>NWTPH-HCID</u>												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
Diesel Range Organics	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Oil Range Organics	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>38 %</i>		<i>10-120 %</i>		"						

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: 0053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24F0105 - EPA 3510C (Fuels/Acid Ext.) w/SG+Acid						Water						
Blank (24F0105-BLK1)			Prepared: 05/29/24 12:03 Analyzed: 06/04/24 18:14									
<u>NWTPH-Dx/SG</u>												
Diesel	ND	---	0.200	mg/L	1	---	---	---	---	---	---	
Oil	ND	---	0.400	mg/L	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 116 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS (24F0105-BS1)			Prepared: 05/29/24 12:03 Analyzed: 06/04/24 18:35									
<u>NWTPH-Dx/SG</u>												
Diesel	1.15	---	0.200	mg/L	1	1.25	---	92	36-132%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 115 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						<i>Q-41</i>
LCS Dup (24F0105-BSD1)			Prepared: 05/29/24 12:03 Analyzed: 06/04/24 18:57									
<u>NWTPH-Dx/SG</u>												
Diesel	1.18	---	0.200	mg/L	1	1.25	---	95	36-132%	3	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 114 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						<i>Q-41</i>

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24F0117 - EPA 3546 w/SG+Acid (NWTPH)						Soil						
Blank (24F0117-BLK1)						Prepared: 06/05/24 07:37 Analyzed: 06/05/24 18:25						
<u>NWTPH-Dx/SG</u>												
Diesel	ND	---	20.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	40.0	mg/kg wet	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS (24F0117-BS1)						Prepared: 06/05/24 07:37 Analyzed: 06/05/24 18:48						
<u>NWTPH-Dx/SG</u>												
Diesel	119	---	20.0	mg/kg wet	1	125	---	95	38-132%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (24F0117-DUP1)						Prepared: 06/05/24 07:37 Analyzed: 06/05/24 19:36						
<u>QC Source Sample: WS-RS-1-0-1 (A4E1574-21)</u>												
<u>NWTPH-Dx/SG</u>												
Diesel	ND	---	36.9	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	90.8	---	73.7	mg/kg dry	1	---	61.8	---	---	38	30%	F-03, Q-05
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 71 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24F0065 - EPA 5030C						Water						
Blank (24F0065-BLK1)			Prepared: 06/04/24 09:48 Analyzed: 06/04/24 13:23									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>99 %</i>		<i>50-150 %</i>		<i>"</i>						
LCS (24F0065-BS2)			Prepared: 06/04/24 09:48 Analyzed: 06/04/24 13:01									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	0.486	---	0.100	mg/L	1	0.500	---	97	80-120%	---	---	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>97 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (24F0065-DUP1)			Prepared: 06/04/24 09:48 Analyzed: 06/04/24 14:50									
<u>QC Source Sample: Non-SDG (A4E1480-06RE1)</u>												
Gasoline Range Organics	ND	---	100	mg/L	1000	---	ND	---	---	---	30%	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 99 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>101 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (24F0065-DUP2)			Prepared: 06/04/24 09:48 Analyzed: 06/04/24 19:35									
<u>QC Source Sample: Non-SDG (A4E1566-04RE1)</u>												
Gasoline Range Organics	ND	---	0.500	mg/L	5	---	ND	---	---	---	30%	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 100 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>104 %</i>		<i>50-150 %</i>		<i>"</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24F0510 - EPA 3546						Soil						
Blank (24F0510-BLK1)			Prepared: 06/14/24 10:03 Analyzed: 06/14/24 19:53						C-07			
<u>EPA 8082A</u>												
Aroclor 1016	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	10.0	ug/kg wet	1	---	---	---	---	---	---	
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 90 %</i>		<i>Limits: 60-125 %</i>		<i>Dilution: 1x</i>						
LCS (24F0510-BS1)			Prepared: 06/14/24 10:03 Analyzed: 06/14/24 20:11						C-07			
<u>EPA 8082A</u>												
Aroclor 1016	178	---	10.0	ug/kg wet	1	250	---	71	47-134%	---	---	
Aroclor 1260	186	---	10.0	ug/kg wet	1	250	---	74	53-140%	---	---	
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 60-125 %</i>		<i>Dilution: 1x</i>						
Duplicate (24F0510-DUP1)			Prepared: 06/14/24 10:03 Analyzed: 06/14/24 21:04						C-07			
<u>QC Source Sample: Non-SDG (A4E1513-07)</u>												
Aroclor 1016	ND	---	12.2	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	12.2	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	12.2	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	12.2	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	12.2	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1254	ND	---	12.2	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1260	ND	---	12.2	ug/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 61 %</i>		<i>Limits: 60-125 %</i>		<i>Dilution: 1x</i>						
Matrix Spike (24F0510-MS1)			Prepared: 06/14/24 10:03 Analyzed: 06/15/24 01:47						C-07			
<u>QC Source Sample: Non-SDG (A4F1175-01)</u>												
<u>EPA 8082A</u>												
Aroclor 1016	170	---	10.0	ug/kg dry	1	250	ND	68	47-134%	---	---	
Aroclor 1260	186	---	10.0	ug/kg dry	1	250	ND	74	53-140%	---	---	
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 89 %</i>		<i>Limits: 60-125 %</i>		<i>Dilution: 1x</i>						

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: 0053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24F0510 - EPA 3546							Soil					

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QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0973 - EPA 3510C (Acid Extraction)						Water						
Blank (24E0973-BLK1)			Prepared: 05/28/24 11:24 Analyzed: 05/29/24 09:40									
<u>EPA 8270E</u>												
Acenaphthene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Chrysene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Fluoranthene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Fluorene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	
Phenanthrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Pyrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Carbazole	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 86 %</i>		<i>Limits: 44-120 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>76 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>34 %</i>		<i>10-133 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>95 %</i>		<i>50-134 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>42 %</i>		<i>19-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>89 %</i>		<i>43-140 %</i>		<i>"</i>						

LCS (24E0973-BS1)			Prepared: 05/28/24 11:24 Analyzed: 05/29/24 10:17									
<u>EPA 8270E</u>												
Acenaphthene	3.48	---	0.0800	ug/L	4	4.00	---	87	47-122%	---	---	
Acenaphthylene	3.75	---	0.0800	ug/L	4	4.00	---	94	41-130%	---	---	
Anthracene	3.85	---	0.0800	ug/L	4	4.00	---	96	57-123%	---	---	

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0973 - EPA 3510C (Acid Extraction)						Water						
LCS (24E0973-BS1)			Prepared: 05/28/24 11:24 Analyzed: 05/29/24 10:17									
Benz(a)anthracene	3.80	---	0.0800	ug/L	4	4.00	---	95	58-125%	---	---	
Benzo(a)pyrene	4.11	---	0.120	ug/L	4	4.00	---	103	54-128%	---	---	
Benzo(b)fluoranthene	3.89	---	0.120	ug/L	4	4.00	---	97	53-131%	---	---	
Benzo(k)fluoranthene	4.04	---	0.120	ug/L	4	4.00	---	101	57-129%	---	---	
Benzo(g,h,i)perylene	3.86	---	0.0800	ug/L	4	4.00	---	97	50-134%	---	---	
Chrysene	3.98	---	0.0800	ug/L	4	4.00	---	100	59-123%	---	---	
Dibenz(a,h)anthracene	3.93	---	0.0800	ug/L	4	4.00	---	98	51-134%	---	---	
Fluoranthene	3.99	---	0.0800	ug/L	4	4.00	---	100	57-128%	---	---	
Fluorene	3.79	---	0.0800	ug/L	4	4.00	---	95	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	3.77	---	0.0800	ug/L	4	4.00	---	94	52-134%	---	---	
1-Methylnaphthalene	3.18	---	0.160	ug/L	4	4.00	---	80	41-120%	---	---	
2-Methylnaphthalene	3.29	---	0.160	ug/L	4	4.00	---	82	40-121%	---	---	
Naphthalene	3.03	---	0.160	ug/L	4	4.00	---	76	40-121%	---	---	
Phenanthrene	3.82	---	0.0800	ug/L	4	4.00	---	95	59-120%	---	---	
Pyrene	4.02	---	0.0800	ug/L	4	4.00	---	100	57-126%	---	---	
Carbazole	4.32	---	0.120	ug/L	4	4.00	---	108	60-122%	---	---	
Dibenzofuran	3.70	---	0.0800	ug/L	4	4.00	---	93	53-120%	---	---	
Pentachlorophenol (PCP)	3.93	---	0.800	ug/L	4	4.00	---	98	35-138%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr) Recovery: 92 % Limits: 44-120 % Dilution: 4x</i>												
<i>2-Fluorobiphenyl (Surr) 81 % 44-120 % "</i>												
<i>Phenol-d6 (Surr) 31 % 10-133 % "</i>												
<i>p-Terphenyl-d14 (Surr) 94 % 50-134 % "</i>												
<i>2-Fluorophenol (Surr) 39 % 19-120 % "</i>												
<i>2,4,6-Tribromophenol (Surr) 110 % 43-140 % "</i>												

LCS Dup (24E0973-BSD1)			Prepared: 05/28/24 11:24 Analyzed: 05/29/24 10:53									Q-19
EPA 8270E												
Acenaphthene	3.31	---	0.0800	ug/L	4	4.00	---	83	47-122%	5	30%	
Acenaphthylene	3.51	---	0.0800	ug/L	4	4.00	---	88	41-130%	7	30%	
Anthracene	3.80	---	0.0800	ug/L	4	4.00	---	95	57-123%	1	30%	
Benz(a)anthracene	3.84	---	0.0800	ug/L	4	4.00	---	96	58-125%	0.9	30%	
Benzo(a)pyrene	4.26	---	0.120	ug/L	4	4.00	---	106	54-128%	3	30%	
Benzo(b)fluoranthene	4.01	---	0.120	ug/L	4	4.00	---	100	53-131%	3	30%	
Benzo(k)fluoranthene	4.18	---	0.120	ug/L	4	4.00	---	105	57-129%	3	30%	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0973 - EPA 3510C (Acid Extraction)						Water						
LCS Dup (24E0973-BSD1)						Prepared: 05/28/24 11:24 Analyzed: 05/29/24 10:53						Q-19
Benzo(g,h,i)perylene	4.00	---	0.0800	ug/L	4	4.00	---	100	50-134%	4	30%	
Chrysene	4.01	---	0.0800	ug/L	4	4.00	---	100	59-123%	0.7	30%	
Dibenz(a,h)anthracene	3.98	---	0.0800	ug/L	4	4.00	---	99	51-134%	1	30%	
Fluoranthene	4.01	---	0.0800	ug/L	4	4.00	---	100	57-128%	0.5	30%	
Fluorene	3.54	---	0.0800	ug/L	4	4.00	---	89	52-124%	7	30%	
Indeno(1,2,3-cd)pyrene	3.80	---	0.0800	ug/L	4	4.00	---	95	52-134%	0.8	30%	
1-Methylnaphthalene	3.04	---	0.160	ug/L	4	4.00	---	76	41-120%	5	30%	
2-Methylnaphthalene	3.11	---	0.160	ug/L	4	4.00	---	78	40-121%	6	30%	
Naphthalene	2.89	---	0.160	ug/L	4	4.00	---	72	40-121%	5	30%	
Phenanthrene	3.74	---	0.0800	ug/L	4	4.00	---	93	59-120%	2	30%	
Pyrene	3.99	---	0.0800	ug/L	4	4.00	---	100	57-126%	0.7	30%	
Carbazole	4.30	---	0.120	ug/L	4	4.00	---	108	60-122%	0.4	30%	
Dibenzofuran	3.47	---	0.0800	ug/L	4	4.00	---	87	53-120%	6	30%	
Pentachlorophenol (PCP)	3.76	---	0.800	ug/L	4	4.00	---	94	35-138%	5	30%	
<i>Surr: Nitrobenzene-d5 (Surr) Recovery: 88 % Limits: 44-120 % Dilution: 4x</i>												
<i>2-Fluorobiphenyl (Surr) 79 % 44-120 % "</i>												
<i>Phenol-d6 (Surr) 34 % 10-133 % "</i>												
<i>p-Terphenyl-d14 (Surr) 94 % 50-134 % "</i>												
<i>2-Fluorophenol (Surr) 41 % 19-120 % "</i>												
<i>2,4,6-Tribromophenol (Surr) 105 % 43-140 % "</i>												

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0999 - EPA 3510C (Acid Extraction)						Water						
Blank (24E0999-BLK1)						Prepared: 05/29/24 05:42 Analyzed: 05/29/24 12:39						
<u>EPA 8270E</u>												
Acenaphthene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Chrysene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Fluoranthene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Fluorene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	
Phenanthrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Pyrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Carbazole	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 90 %</i>		<i>Limits: 44-120 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>73 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>27 %</i>		<i>10-133 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>106 %</i>		<i>50-134 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>42 %</i>		<i>19-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>84 %</i>		<i>43-140 %</i>		<i>"</i>						

LCS (24E0999-BS1)						Prepared: 05/29/24 05:42 Analyzed: 05/29/24 13:14						
<u>EPA 8270E</u>												
Acenaphthene	3.70	---	0.0800	ug/L	4	4.00	---	93	47-122%	---	---	
Acenaphthylene	4.04	---	0.0800	ug/L	4	4.00	---	101	41-130%	---	---	
Anthracene	4.65	---	0.0800	ug/L	4	4.00	---	116	57-123%	---	---	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
---	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0999 - EPA 3510C (Acid Extraction)						Water						
LCS (24E0999-BS1)			Prepared: 05/29/24 05:42			Analyzed: 05/29/24 13:14						
Benz(a)anthracene	4.75	---	0.0800	ug/L	4	4.00	---	119	58-125%	---	---	
Benzo(a)pyrene	4.66	---	0.120	ug/L	4	4.00	---	117	54-128%	---	---	
Benzo(b)fluoranthene	4.90	---	0.120	ug/L	4	4.00	---	122	53-131%	---	---	
Benzo(k)fluoranthene	4.89	---	0.120	ug/L	4	4.00	---	122	57-129%	---	---	
Benzo(g,h,i)perylene	4.71	---	0.0800	ug/L	4	4.00	---	118	50-134%	---	---	
Chrysene	4.70	---	0.0800	ug/L	4	4.00	---	118	59-123%	---	---	
Dibenz(a,h)anthracene	4.72	---	0.0800	ug/L	4	4.00	---	118	51-134%	---	---	
Fluoranthene	4.82	---	0.0800	ug/L	4	4.00	---	120	57-128%	---	---	
Fluorene	4.49	---	0.0800	ug/L	4	4.00	---	112	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	4.58	---	0.0800	ug/L	4	4.00	---	115	52-134%	---	---	
1-Methylnaphthalene	2.86	---	0.160	ug/L	4	4.00	---	72	41-120%	---	---	
2-Methylnaphthalene	2.73	---	0.160	ug/L	4	4.00	---	68	40-121%	---	---	
Naphthalene	2.71	---	0.160	ug/L	4	4.00	---	68	40-121%	---	---	
Phenanthrene	4.52	---	0.0800	ug/L	4	4.00	---	113	59-120%	---	---	
Pyrene	4.72	---	0.0800	ug/L	4	4.00	---	118	57-126%	---	---	
Carbazole	4.97	---	0.120	ug/L	4	4.00	---	124	60-122%	---	---	Q-29
Dibenzofuran	4.14	---	0.0800	ug/L	4	4.00	---	103	53-120%	---	---	
Pentachlorophenol (PCP)	3.56	---	0.800	ug/L	4	4.00	---	89	35-138%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 94 %</i>		<i>Limits: 44-120 %</i>		<i>Dilution: 4x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>87 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>29 %</i>		<i>10-133 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>115 %</i>		<i>50-134 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>45 %</i>		<i>19-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>111 %</i>		<i>43-140 %</i>		<i>"</i>						

Matrix Spike (24E0999-MS1) Prepared: 05/29/24 05:42 Analyzed: 05/29/24 14:52

QC Source Sample: Non-SDG (A4E1520-01)

EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Acenaphthene	2.41	---	0.0825	ug/L	4	4.12	ND	58	47-122%	---	---	
Acenaphthylene	2.58	---	0.0825	ug/L	4	4.12	ND	63	41-130%	---	---	
Anthracene	3.42	---	0.0825	ug/L	4	4.12	ND	83	57-123%	---	---	
Benz(a)anthracene	3.88	---	0.0825	ug/L	4	4.12	ND	94	58-125%	---	---	
Benzo(a)pyrene	4.04	---	0.124	ug/L	4	4.12	ND	98	54-128%	---	---	
Benzo(b)fluoranthene	4.17	---	0.124	ug/L	4	4.12	ND	101	53-131%	---	---	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
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Batch 24E0999 - EPA 3510C (Acid Extraction) Water

Matrix Spike (24E0999-MS1) Prepared: 05/29/24 05:42 Analyzed: 05/29/24 14:52

QC Source Sample: Non-SDG (A4E1520-01)												
Benzo(k)fluoranthene	4.00	---	0.124	ug/L	4	4.12	ND	97	57-129%	---	---	
Benzo(g,h,i)perylene	3.79	---	0.0825	ug/L	4	4.12	ND	92	50-134%	---	---	
Chrysene	3.72	---	0.0825	ug/L	4	4.12	ND	90	59-123%	---	---	
Dibenz(a,h)anthracene	3.73	---	0.0825	ug/L	4	4.12	ND	90	51-134%	---	---	
Fluoranthene	3.80	---	0.0825	ug/L	4	4.12	ND	92	57-128%	---	---	
Fluorene	2.90	---	0.0825	ug/L	4	4.12	ND	70	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	3.76	---	0.0825	ug/L	4	4.12	ND	91	52-134%	---	---	
1-Methylnaphthalene	1.99	---	0.165	ug/L	4	4.12	ND	48	41-120%	---	---	
2-Methylnaphthalene	1.94	---	0.165	ug/L	4	4.12	ND	47	40-121%	---	---	
Naphthalene	1.81	---	0.165	ug/L	4	4.12	ND	44	40-121%	---	---	
Phenanthrene	3.42	---	0.0825	ug/L	4	4.12	ND	83	59-120%	---	---	
Pyrene	3.75	---	0.0825	ug/L	4	4.12	ND	91	57-126%	---	---	
Carbazole	3.94	---	0.124	ug/L	4	4.12	ND	96	60-122%	---	---	
Dibenzofuran	2.64	---	0.0825	ug/L	4	4.12	ND	64	53-120%	---	---	
Pentachlorophenol (PCP)	3.82	---	0.825	ug/L	4	4.12	ND	93	35-138%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr) Recovery: 56 % Limits: 44-120 % Dilution: 4x</i>												
<i>2-Fluorobiphenyl (Surr) 51 % 44-120 % "</i>												
<i>Phenol-d6 (Surr) 20 % 10-133 % "</i>												
<i>p-Terphenyl-d14 (Surr) 90 % 50-134 % "</i>												
<i>2-Fluorophenol (Surr) 28 % 19-120 % "</i>												
<i>2,4,6-Tribromophenol (Surr) 88 % 43-140 % "</i>												

Matrix Spike Dup (24E0999-MSD1) Prepared: 05/29/24 05:42 Analyzed: 05/29/24 15:27

QC Source Sample: Non-SDG (A4E1520-01)												
Acenaphthene	2.66	---	0.0870	ug/L	4	4.35	ND	61	47-122%	10	30%	
Acenaphthylene	2.83	---	0.0870	ug/L	4	4.35	ND	65	41-130%	9	30%	
Anthracene	3.41	---	0.0870	ug/L	4	4.35	ND	78	57-123%	0.4	30%	
Benz(a)anthracene	3.63	---	0.0870	ug/L	4	4.35	ND	84	58-125%	7	30%	
Benzo(a)pyrene	3.85	---	0.130	ug/L	4	4.35	ND	89	54-128%	5	30%	
Benzo(b)fluoranthene	3.84	---	0.130	ug/L	4	4.35	ND	88	53-131%	8	30%	
Benzo(k)fluoranthene	3.74	---	0.130	ug/L	4	4.35	ND	86	57-129%	7	30%	
Benzo(g,h,i)perylene	3.47	---	0.0870	ug/L	4	4.35	ND	80	50-134%	9	30%	
Chrysene	3.52	---	0.0870	ug/L	4	4.35	ND	81	59-123%	6	30%	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

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ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0999 - EPA 3510C (Acid Extraction)						Water						
Matrix Spike Dup (24E0999-MSD1)						Prepared: 05/29/24 05:42 Analyzed: 05/29/24 15:27						
QC Source Sample: Non-SDG (A4E1520-01)												
Dibenz(a,h)anthracene	3.48	---	0.0870	ug/L	4	4.35	ND	80	51-134%	7	30%	
Fluoranthene	3.69	---	0.0870	ug/L	4	4.35	ND	85	57-128%	3	30%	
Fluorene	3.19	---	0.0870	ug/L	4	4.35	ND	73	52-124%	9	30%	
Indeno(1,2,3-cd)pyrene	3.42	---	0.0870	ug/L	4	4.35	ND	79	52-134%	10	30%	
1-Methylnaphthalene	2.16	---	0.174	ug/L	4	4.35	ND	50	41-120%	8	30%	
2-Methylnaphthalene	2.10	---	0.174	ug/L	4	4.35	ND	48	40-121%	8	30%	
Naphthalene	2.01	---	0.174	ug/L	4	4.35	ND	46	40-121%	10	30%	
Phenanthrene	3.39	---	0.0870	ug/L	4	4.35	ND	78	59-120%	0.8	30%	
Pyrene	3.60	---	0.0870	ug/L	4	4.35	ND	83	57-126%	4	30%	
Carbazole	3.78	---	0.130	ug/L	4	4.35	ND	87	60-122%	4	30%	
Dibenzofuran	2.94	---	0.0870	ug/L	4	4.35	ND	68	53-120%	11	30%	
Pentachlorophenol (PCP)	3.62	---	0.870	ug/L	4	4.35	ND	83	35-138%	5	30%	
<i>Surr: Nitrobenzene-d5 (Surr) Recovery: 59 % Limits: 44-120 % Dilution: 4x</i>												
<i>2-Fluorobiphenyl (Surr) 52 % 44-120 % "</i>												
<i>Phenol-d6 (Surr) 22 % 10-133 % "</i>												
<i>p-Terphenyl-d14 (Surr) 78 % 50-134 % "</i>												
<i>2-Fluorophenol (Surr) 30 % 19-120 % "</i>												
<i>2,4,6-Tribromophenol (Surr) 79 % 43-140 % "</i>												

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

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ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E1016 - EPA 3546						Soil						
Blank (24E1016-BLK1)			Prepared: 05/29/24 09:52 Analyzed: 05/29/24 14:31									
<u>EPA 8270E</u>												
Acenaphthene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Acenaphthylene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Anthracene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Benz(a)anthracene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Benzo(a)pyrene	ND	---	4.00	ug/kg wet	1	---	---	---	---	---	---	---
Benzo(b)fluoranthene	ND	---	4.00	ug/kg wet	1	---	---	---	---	---	---	---
Benzo(k)fluoranthene	ND	---	4.00	ug/kg wet	1	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Chrysene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Dibenz(a,h)anthracene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Fluoranthene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Fluorene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
1-Methylnaphthalene	ND	---	5.33	ug/kg wet	1	---	---	---	---	---	---	---
2-Methylnaphthalene	ND	---	5.33	ug/kg wet	1	---	---	---	---	---	---	---
Naphthalene	ND	---	5.33	ug/kg wet	1	---	---	---	---	---	---	---
Phenanthrene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Pyrene	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Carbazole	ND	---	4.00	ug/kg wet	1	---	---	---	---	---	---	---
Dibenzofuran	ND	---	2.67	ug/kg wet	1	---	---	---	---	---	---	---
Pentachlorophenol (PCP)	ND	---	26.7	ug/kg wet	1	---	---	---	---	---	---	---
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 90 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>85 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>101 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>97 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>87 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>94 %</i>		<i>39-132 %</i>		<i>"</i>						

LCS (24E1016-BS1)			Prepared: 05/29/24 09:52 Analyzed: 05/29/24 15:07									
<u>EPA 8270E</u>												
Acenaphthene	549	---	10.7	ug/kg wet	4	533	---	103	40-123%	---	---	---
Acenaphthylene	581	---	10.7	ug/kg wet	4	533	---	109	32-132%	---	---	---
Anthracene	563	---	10.7	ug/kg wet	4	533	---	106	47-123%	---	---	---

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ANALYTICAL REPORT

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E1016 - EPA 3546						Soil						
LCS (24E1016-BS1)			Prepared: 05/29/24 09:52			Analyzed: 05/29/24 15:07						
Benz(a)anthracene	532	---	10.7	ug/kg wet	4	533	---	100	49-126%	---	---	
Benzo(a)pyrene	617	---	16.0	ug/kg wet	4	533	---	116	45-129%	---	---	
Benzo(b)fluoranthene	561	---	16.0	ug/kg wet	4	533	---	105	45-132%	---	---	
Benzo(k)fluoranthene	569	---	16.0	ug/kg wet	4	533	---	107	47-132%	---	---	
Benzo(g,h,i)perylene	541	---	10.7	ug/kg wet	4	533	---	101	43-134%	---	---	
Chrysene	557	---	10.7	ug/kg wet	4	533	---	104	50-124%	---	---	
Dibenz(a,h)anthracene	555	---	10.7	ug/kg wet	4	533	---	104	45-134%	---	---	
Fluoranthene	556	---	10.7	ug/kg wet	4	533	---	104	50-127%	---	---	
Fluorene	552	---	10.7	ug/kg wet	4	533	---	103	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	531	---	10.7	ug/kg wet	4	533	---	100	45-133%	---	---	
1-Methylnaphthalene	567	---	21.3	ug/kg wet	4	533	---	106	40-120%	---	---	
2-Methylnaphthalene	591	---	21.3	ug/kg wet	4	533	---	111	38-122%	---	---	
Naphthalene	541	---	21.3	ug/kg wet	4	533	---	101	35-123%	---	---	
Phenanthrene	542	---	10.7	ug/kg wet	4	533	---	102	50-121%	---	---	
Pyrene	567	---	10.7	ug/kg wet	4	533	---	106	47-127%	---	---	
Carbazole	576	---	16.0	ug/kg wet	4	533	---	108	50-123%	---	---	
Dibenzofuran	552	---	10.7	ug/kg wet	4	533	---	103	44-120%	---	---	
Pentachlorophenol (PCP)	538	---	107	ug/kg wet	4	533	---	101	25-133%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 102 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 4x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>93 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>114 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>100 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>86 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>111 %</i>		<i>39-132 %</i>		<i>"</i>						

Duplicate (24E1016-DUP1) Prepared: 05/29/24 09:52 Analyzed: 05/29/24 19:23

QC Source Sample: WS-SB-2-0.0-5.0 (A4E1574-08RE1)

EPA 8270E												
Acenaphthene	ND	---	3.54	ug/kg dry	1	---	ND	---	---	---	30%	
Acenaphthylene	ND	---	3.54	ug/kg dry	1	---	ND	---	---	---	30%	
Anthracene	ND	---	3.54	ug/kg dry	1	---	ND	---	---	---	30%	
Benz(a)anthracene	ND	---	3.54	ug/kg dry	1	---	ND	---	---	---	30%	
Benzo(a)pyrene	ND	---	5.30	ug/kg dry	1	---	ND	---	---	---	30%	
Benzo(b)fluoranthene	ND	---	5.30	ug/kg dry	1	---	ND	---	---	---	30%	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
---	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E1016 - EPA 3546						Soil						
Duplicate (24E1016-DUP1)			Prepared: 05/29/24 09:52 Analyzed: 05/29/24 19:23									
QC Source Sample: WS-SB-2-0.0-5.0 (A4E1574-08RE1)												
Benzo(k)fluoranthene	ND	---	5.30	ug/kg dry	1	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	---	3.54	ug/kg dry	1	---	ND	---	---	---	30%	
Chrysene	ND	---	3.54	ug/kg dry	1	---	ND	---	---	---	30%	
Dibenz(a,h)anthracene	ND	---	3.54	ug/kg dry	1	---	ND	---	---	---	30%	
Fluoranthene	ND	---	3.54	ug/kg dry	1	---	ND	---	---	---	30%	
Fluorene	ND	---	3.54	ug/kg dry	1	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	---	3.54	ug/kg dry	1	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	---	7.06	ug/kg dry	1	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	---	7.06	ug/kg dry	1	---	ND	---	---	---	30%	
Naphthalene	ND	---	7.06	ug/kg dry	1	---	ND	---	---	---	30%	
Phenanthrene	ND	---	3.54	ug/kg dry	1	---	ND	---	---	---	30%	
Pyrene	ND	---	3.54	ug/kg dry	1	---	ND	---	---	---	30%	
Carbazole	ND	---	5.30	ug/kg dry	1	---	ND	---	---	---	30%	
Dibenzofuran	ND	---	3.54	ug/kg dry	1	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	---	35.4	ug/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>91 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>112 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>94 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>104 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>110 %</i>		<i>39-132 %</i>		<i>"</i>						

Matrix Spike (24E1016-MS1) Prepared: 05/29/24 09:52 Analyzed: 05/29/24 18:09

QC Source Sample: WS-RS-3-2-3 (A4E1574-27RE2)												
EPA 8270E												
Acenaphthene	779	---	17.0	ug/kg dry	4	847	ND	92	40-123%	---	---	
Acenaphthylene	832	---	17.0	ug/kg dry	4	847	ND	98	32-132%	---	---	
Anthracene	805	---	17.0	ug/kg dry	4	847	ND	95	47-123%	---	---	
Benz(a)anthracene	754	---	17.0	ug/kg dry	4	847	ND	89	49-126%	---	---	
Benzo(a)pyrene	870	---	25.4	ug/kg dry	4	847	ND	103	45-129%	---	---	
Benzo(b)fluoranthene	780	---	25.4	ug/kg dry	4	847	ND	92	45-132%	---	---	
Benzo(k)fluoranthene	809	---	25.4	ug/kg dry	4	847	ND	95	47-132%	---	---	
Benzo(g,h,i)perylene	774	---	17.0	ug/kg dry	4	847	11.7	90	43-134%	---	---	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E1016 - EPA 3546						Soil						
Matrix Spike (24E1016-MS1)			Prepared: 05/29/24 09:52 Analyzed: 05/29/24 18:09									
QC Source Sample: WS-RS-3-2-3 (A4E1574-27RE2)												
Chrysene	786	---	17.0	ug/kg dry	4	847	ND	93	50-124%	---	---	
Dibenz(a,h)anthracene	791	---	17.0	ug/kg dry	4	847	ND	93	45-134%	---	---	
Fluoranthene	807	---	17.0	ug/kg dry	4	847	12.0	94	50-127%	---	---	
Fluorene	789	---	17.0	ug/kg dry	4	847	ND	93	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	764	---	17.0	ug/kg dry	4	847	8.76	89	45-133%	---	---	
1-Methylnaphthalene	816	---	33.9	ug/kg dry	4	847	ND	96	40-120%	---	---	
2-Methylnaphthalene	851	---	33.9	ug/kg dry	4	847	ND	100	38-122%	---	---	
Naphthalene	769	---	33.9	ug/kg dry	4	847	ND	91	35-123%	---	---	
Phenanthrene	774	---	17.0	ug/kg dry	4	847	8.50	90	50-121%	---	---	
Pyrene	802	---	17.0	ug/kg dry	4	847	13.2	93	47-127%	---	---	
Carbazole	858	---	25.4	ug/kg dry	4	847	ND	101	50-123%	---	---	
Dibenzofuran	800	---	17.0	ug/kg dry	4	847	ND	94	44-120%	---	---	
Pentachlorophenol (PCP)	873	---	170	ug/kg dry	4	847	ND	103	25-133%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 90 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 4x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>81 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>107 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>81 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>92 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>105 %</i>		<i>39-132 %</i>		<i>"</i>						

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0996 - EPA 3051A												
Soil												
Blank (24E0996-BLK1)												
Prepared: 05/29/24 10:15 Analyzed: 05/30/24 16:56												
<u>EPA 6020B</u>												
Arsenic	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Barium	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
Chromium	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	---	0.0800	mg/kg wet	10	---	---	---	---	---	---	
Selenium	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
LCS (24E0996-BS1)												
Prepared: 05/29/24 10:15 Analyzed: 05/30/24 17:10												
<u>EPA 6020B</u>												
Arsenic	51.1	---	1.00	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Barium	51.8	---	1.00	mg/kg wet	10	50.0	---	104	80-120%	---	---	
Cadmium	50.7	---	0.200	mg/kg wet	10	50.0	---	101	80-120%	---	---	
Chromium	51.5	---	1.00	mg/kg wet	10	50.0	---	103	80-120%	---	---	
Lead	49.1	---	0.200	mg/kg wet	10	50.0	---	98	80-120%	---	---	
Mercury	0.954	---	0.0800	mg/kg wet	10	1.00	---	95	80-120%	---	---	
Selenium	25.1	---	1.00	mg/kg wet	10	25.0	---	100	80-120%	---	---	
Silver	26.1	---	0.200	mg/kg wet	10	25.0	---	104	80-120%	---	---	
Duplicate (24E0996-DUP1)												
Prepared: 05/29/24 10:15 Analyzed: 05/30/24 17:23												
<u>QC Source Sample: Non-SDG (A4E1569-03)</u>												
Arsenic	1.75	---	1.17	mg/kg dry	10	---	1.88	---	---	7	20%	
Barium	81.4	---	1.17	mg/kg dry	10	---	97.4	---	---	18	20%	
Cadmium	ND	---	0.234	mg/kg dry	10	---	ND	---	---	---	20%	
Chromium	13.2	---	1.17	mg/kg dry	10	---	33.1	---	---	86	20%	Q-04
Lead	13.0	---	0.234	mg/kg dry	10	---	11.2	---	---	16	20%	
Mercury	ND	---	0.0936	mg/kg dry	10	---	ND	---	---	---	20%	
Selenium	ND	---	1.17	mg/kg dry	10	---	ND	---	---	---	20%	
Silver	ND	---	0.234	mg/kg dry	10	---	ND	---	---	---	20%	
Matrix Spike (24E0996-MS1)												
Prepared: 05/29/24 10:15 Analyzed: 05/30/24 17:37												

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0996 - EPA 3051A						Soil						
Matrix Spike (24E0996-MS1)						Prepared: 05/29/24 10:15 Analyzed: 05/30/24 17:37						
QC Source Sample: Non-SDG (A4E1569-04)												
EPA 6020B												
Arsenic	63.8	---	1.25	mg/kg dry	10	62.3	2.91	98	75-125%	---	---	
Barium	356	---	1.25	mg/kg dry	10	62.3	312	70	75-125%	---	---	Q-65
Cadmium	64.7	---	0.249	mg/kg dry	10	62.3	ND	104	75-125%	---	---	
Chromium	73.0	---	1.25	mg/kg dry	10	62.3	9.00	103	75-125%	---	---	
Lead	79.8	---	0.249	mg/kg dry	10	62.3	18.0	99	75-125%	---	---	
Mercury	1.31	---	0.0997	mg/kg dry	10	1.25	0.100	97	75-125%	---	---	
Selenium	29.4	---	1.25	mg/kg dry	10	31.2	ND	94	75-125%	---	---	
Silver	32.9	---	0.249	mg/kg dry	10	31.2	ND	105	75-125%	---	---	

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Darrell Auvil, Client Services Manager



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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24F0030 - EPA 3015A												
Water												
Blank (24F0030-BLK1)												
						Prepared: 06/03/24 12:50 Analyzed: 06/03/24 17:27						
<u>EPA 6020B</u>												
Arsenic	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Barium	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Cadmium	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Chromium	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Mercury	ND	---	0.0800	ug/L	1	---	---	---	---	---	---	
Selenium	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Silver	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
LCS (24F0030-BS1)												
						Prepared: 06/03/24 12:50 Analyzed: 06/03/24 17:32						
<u>EPA 6020B</u>												
Arsenic	57.0	---	1.00	ug/L	1	55.6	---	103	80-120%	---	---	
Barium	58.3	---	2.00	ug/L	1	55.6	---	105	80-120%	---	---	
Cadmium	56.1	---	0.200	ug/L	1	55.6	---	101	80-120%	---	---	
Chromium	59.1	---	2.00	ug/L	1	55.6	---	106	80-120%	---	---	
Lead	55.4	---	0.200	ug/L	1	55.6	---	100	80-120%	---	---	
Mercury	1.06	---	0.0800	ug/L	1	1.11	---	95	80-120%	---	---	
Selenium	29.1	---	1.00	ug/L	1	27.8	---	105	80-120%	---	---	
Silver	29.9	---	0.200	ug/L	1	27.8	---	108	80-120%	---	---	
Duplicate (24F0030-DUP1)												
						Prepared: 06/03/24 12:50 Analyzed: 06/03/24 17:55						
<u>QC Source Sample: Non-SDG (A4E1566-01)</u>												
Arsenic	13.0	---	1.00	ug/L	1	---	12.3	---	---	5	20%	
Cadmium	1.32	---	0.200	ug/L	1	---	1.35	---	---	2	20%	
Chromium	43.2	---	2.00	ug/L	1	---	42.4	---	---	2	20%	
Selenium	21.7	---	1.00	ug/L	1	---	22.4	---	---	3	20%	
Silver	ND	---	0.200	ug/L	1	---	ND	---	---	---	20%	
Duplicate (24F0030-DUP2)												
						Prepared: 06/03/24 12:50 Analyzed: 06/04/24 15:52						
<u>QC Source Sample: Non-SDG (A4E1566-01RE1)</u>												
Barium	2210	---	20.0	ug/L	10	---	2180	---	---	1	20%	Q-16
Lead	14.6	---	2.00	ug/L	10	---	13.9	---	---	5	20%	Q-16

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ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24F0030 - EPA 3015A						Water						
Duplicate (24F0030-DUP2)			Prepared: 06/03/24 12:50 Analyzed: 06/04/24 15:52									
QC Source Sample: Non-SDG (A4E1566-01RE1)												
Mercury	ND	---	0.800	ug/L	10	---	ND	---	---	---	20%	Q-16
Matrix Spike (24F0030-MS1)			Prepared: 06/03/24 12:50 Analyzed: 06/03/24 18:06									
QC Source Sample: Non-SDG (A4E1566-03)												
EPA 6020B												
Arsenic	61.8	---	1.00	ug/L	1	55.6	4.48	103	75-125%	---	---	
Barium	298	---	2.00	ug/L	1	55.6	249	88	75-125%	---	---	E
Cadmium	57.9	---	0.200	ug/L	1	55.6	0.202	104	75-125%	---	---	
Chromium	71.2	---	2.00	ug/L	1	55.6	12.6	105	75-125%	---	---	
Lead	59.4	---	0.200	ug/L	1	55.6	6.11	96	75-125%	---	---	
Mercury	1.09	---	0.0800	ug/L	1	1.11	ND	98	75-125%	---	---	
Selenium	32.4	---	1.00	ug/L	1	27.8	3.28	105	75-125%	---	---	
Silver	30.1	---	0.200	ug/L	1	27.8	ND	108	75-125%	---	---	

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Darrell Auvil, Client Services Manager



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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0959 - Total Solids (Dry Weight) - 2022						Soil						
Duplicate (24E0959-DUP1)			Prepared: 05/28/24 09:46 Analyzed: 05/29/24 07:35									
<u>QC Source Sample: WS-SB-2-0.0-5.0 (A4E1574-08)</u>												
<u>EPA 8000D</u>												
% Solids	72.3	---	1.00	%	1	---	71.2	---	---	2	10%	
Duplicate (24E0959-DUP2)			Prepared: 05/28/24 09:46 Analyzed: 05/29/24 07:35									
<u>QC Source Sample: WS-SB-2-5.0-7.0 (A4E1574-09)</u>												
<u>EPA 8000D</u>												
% Solids	70.5	---	1.00	%	1	---	69.5	---	---	2	10%	
Duplicate (24E0959-DUP3)			Prepared: 05/28/24 09:46 Analyzed: 05/29/24 07:35									
<u>QC Source Sample: WS-SB-4-0.0-5.0 (A4E1574-10)</u>												
<u>EPA 8000D</u>												
% Solids	68.9	---	1.00	%	1	---	69.4	---	---	0.7	10%	
Duplicate (24E0959-DUP4)			Prepared: 05/28/24 09:46 Analyzed: 05/29/24 07:35									
<u>QC Source Sample: WS-SB-4-5.0-9.0 (A4E1574-11)</u>												
<u>EPA 8000D</u>												
% Solids	63.9	---	1.00	%	1	---	64.4	---	---	0.8	10%	
Duplicate (24E0959-DUP5)			Prepared: 05/28/24 09:46 Analyzed: 05/29/24 07:35									
<u>QC Source Sample: WS-SB-1-0.0-3.0 (A4E1574-12)</u>												
<u>EPA 8000D</u>												
% Solids	81.4	---	1.00	%	1	---	80.9	---	---	0.6	10%	
Duplicate (24E0959-DUP6)			Prepared: 05/28/24 19:11 Analyzed: 05/29/24 07:35									
<u>QC Source Sample: Non-SDG (A4E1654-02)</u>												
<u>EPA 8000D</u>												
% Solids	79.0	---	1.00	%	1	---	79.4	---	---	0.5	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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SAMPLE PREPARATION INFORMATION

Hydrocarbon Identification Screen by NWTPH-HCID

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24E1027</u>							
A4E1574-01	Water	NWTPH-HCID	05/21/24 16:30	05/29/24 12:03	880mL/5mL	1000mL/5mL	1.14
A4E1574-02	Water	NWTPH-HCID	05/22/24 18:55	05/29/24 12:03	1040mL/5mL	1000mL/5mL	0.96
A4E1574-03	Water	NWTPH-HCID	05/22/24 14:25	05/29/24 12:03	920mL/5mL	1000mL/5mL	1.09
A4E1574-04	Water	NWTPH-HCID	05/22/24 14:30	05/29/24 12:03	1060mL/5mL	1000mL/5mL	0.94
A4E1574-05	Water	NWTPH-HCID	05/21/24 17:30	05/29/24 12:03	900mL/5mL	1000mL/5mL	1.11
A4E1574-06	Water	NWTPH-HCID	05/22/24 17:45	05/29/24 12:03	1020mL/5mL	1000mL/5mL	0.98
A4E1574-07	Water	NWTPH-HCID	05/22/24 17:30	05/29/24 12:03	1000mL/5mL	1000mL/5mL	1.00
A4E1574-34	Water	NWTPH-HCID	05/22/24 17:07	05/29/24 12:03	930mL/5mL	1000mL/5mL	1.08

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24E0968</u>							
A4E1574-18	Soil	NWTPH-HCID	05/22/24 13:40	05/28/24 10:24	10.95g/10mL	10g/10mL	0.91
A4E1574-19	Soil	NWTPH-HCID	05/22/24 16:40	05/28/24 10:24	10.16g/10mL	10g/10mL	0.98
A4E1574-20	Soil	NWTPH-HCID	05/22/24 16:45	05/28/24 10:24	10.73g/10mL	10g/10mL	0.93
A4E1574-21	Soil	NWTPH-HCID	05/22/24 09:45	05/28/24 10:24	10.26g/10mL	10g/10mL	0.98
A4E1574-22	Soil	NWTPH-HCID	05/22/24 10:00	05/28/24 10:24	10.14g/10mL	10g/10mL	0.99
A4E1574-23	Soil	NWTPH-HCID	05/22/24 10:15	05/28/24 10:24	10.4g/10mL	10g/10mL	0.96
A4E1574-24	Soil	NWTPH-HCID	05/22/24 10:20	05/28/24 10:24	10.7g/10mL	10g/10mL	0.94
A4E1574-25	Soil	NWTPH-HCID	05/22/24 10:30	05/28/24 10:24	10.93g/10mL	10g/10mL	0.92
A4E1574-26	Soil	NWTPH-HCID	05/22/24 11:00	05/28/24 10:24	10.87g/10mL	10g/10mL	0.92
A4E1574-27	Soil	NWTPH-HCID	05/22/24 11:10	05/28/24 10:24	10.55g/10mL	10g/10mL	0.95
<u>Batch: 24E0969</u>							
A4E1574-08	Soil	NWTPH-HCID	05/21/24 15:50	05/28/24 10:25	10.59g/10mL	10g/10mL	0.94
A4E1574-09	Soil	NWTPH-HCID	05/21/24 15:55	05/28/24 10:25	10.23g/10mL	10g/10mL	0.98
A4E1574-10	Soil	NWTPH-HCID	05/21/24 16:50	05/28/24 10:25	10.19g/10mL	10g/10mL	0.98
A4E1574-11	Soil	NWTPH-HCID	05/21/24 16:55	05/28/24 10:25	10.49g/10mL	10g/10mL	0.95
A4E1574-12	Soil	NWTPH-HCID	05/22/24 15:12	05/28/24 10:25	10.12g/10mL	10g/10mL	0.99
A4E1574-13	Soil	NWTPH-HCID	05/22/24 15:25	05/28/24 10:25	10.3g/10mL	10g/10mL	0.97
A4E1574-14	Soil	NWTPH-HCID	05/22/24 15:20	05/28/24 10:25	10.4g/10mL	10g/10mL	0.96
A4E1574-15	Soil	NWTPH-HCID	05/22/24 12:23	05/28/24 10:25	10.86g/10mL	10g/10mL	0.92
A4E1574-16	Soil	NWTPH-HCID	05/22/24 12:44	05/28/24 10:25	10.79g/10mL	10g/10mL	0.93
A4E1574-17	Soil	NWTPH-HCID	05/22/24 13:35	05/28/24 10:25	10.3g/10mL	10g/10mL	0.97

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

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ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: 0053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx with Acid/Silica Gel Cleanup

Prep: EPA 3510C (Fuels/Acid Ext.) w/SG+Acid					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 24F0105</u>							
A4E1574-01	Water	NWTPH-Dx/SG	05/21/24 16:30	05/29/24 12:03	880mL/5mL	1000mL/5mL	1.14
A4E1574-34	Water	NWTPH-Dx/SG	05/22/24 17:07	05/29/24 12:03	930mL/5mL	1000mL/5mL	1.08

Prep: EPA 3546 w/SG+Acid (NWTPH)					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 24F0117</u>							
A4E1574-21	Soil	NWTPH-Dx/SG	05/22/24 09:45	06/05/24 07:37	11.01g/5mL	10g/5mL	0.91
A4E1574-25	Soil	NWTPH-Dx/SG	05/22/24 10:30	06/05/24 07:37	11.25g/5mL	10g/5mL	0.89
A4E1574-26	Soil	NWTPH-Dx/SG	05/22/24 11:00	06/05/24 07:37	11.48g/5mL	10g/5mL	0.87

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5030C					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 24F0065</u>							
A4E1574-01	Water	NWTPH-Gx (MS)	05/21/24 16:30	06/04/24 12:57	5mL/5mL	5mL/5mL	1.00
A4E1574-34	Water	NWTPH-Gx (MS)	05/22/24 17:07	06/04/24 12:57	5mL/5mL	5mL/5mL	1.00

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 24F0510</u>							
A4E1574-25	Soil	EPA 8082A	05/22/24 10:30	06/14/24 10:03	11.13g/5mL	10g/5mL	0.90

Selected Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3510C (Acid Extraction)					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 24E0973</u>							
A4E1574-01	Water	EPA 8270E	05/21/24 16:30	05/28/24 11:24	720mL/1mL	1000mL/1mL	1.39
A4E1574-05RE1	Water	EPA 8270E	05/21/24 17:30	05/28/24 11:24	810mL/1mL	1000mL/1mL	1.23
<u>Batch: 24E0999</u>							
A4E1574-02	Water	EPA 8270E	05/22/24 18:55	05/29/24 05:42	940mL/1mL	1000mL/1mL	1.06
A4E1574-03	Water	EPA 8270E	05/22/24 14:25	05/29/24 05:42	1040mL/1mL	1000mL/1mL	0.96

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ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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SAMPLE PREPARATION INFORMATION

Selected Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3510C (Acid Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A4E1574-04	Water	EPA 8270E	05/22/24 14:30	05/29/24 05:42	1060mL/1mL	1000mL/1mL	0.94
A4E1574-06	Water	EPA 8270E	05/22/24 17:45	05/29/24 05:42	1030mL/1mL	1000mL/1mL	0.97
A4E1574-07	Water	EPA 8270E	05/22/24 17:30	05/29/24 05:42	790mL/1mL	1000mL/1mL	1.27
A4E1574-34	Water	EPA 8270E	05/22/24 17:07	05/29/24 05:42	1010mL/1mL	1000mL/1mL	0.99
A4E1574-34RE1	Water	EPA 8270E	05/22/24 17:07	05/29/24 05:42	1010mL/1mL	1000mL/1mL	0.99

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24E1016							
A4E1574-08RE1	Soil	EPA 8270E	05/21/24 15:50	05/29/24 09:52	15.22g/2mL	15g/2mL	0.99
A4E1574-09	Soil	EPA 8270E	05/21/24 15:55	05/29/24 09:52	15.75g/2mL	15g/2mL	0.95
A4E1574-10	Soil	EPA 8270E	05/21/24 16:50	05/29/24 09:52	15.1g/2mL	15g/2mL	0.99
A4E1574-11	Soil	EPA 8270E	05/21/24 16:55	05/29/24 09:52	15.13g/2mL	15g/2mL	0.99
A4E1574-12RE1	Soil	EPA 8270E	05/22/24 15:12	05/29/24 09:52	15.32g/2mL	15g/2mL	0.98
A4E1574-13RE1	Soil	EPA 8270E	05/22/24 15:25	05/29/24 09:52	15.62g/2mL	15g/2mL	0.96
A4E1574-14RE1	Soil	EPA 8270E	05/22/24 15:20	05/29/24 09:52	15.1g/2mL	15g/2mL	0.99
A4E1574-15	Soil	EPA 8270E	05/22/24 12:23	05/29/24 09:52	15.13g/2mL	15g/2mL	0.99
A4E1574-16	Soil	EPA 8270E	05/22/24 12:44	05/29/24 09:52	15.13g/2mL	15g/2mL	0.99
A4E1574-17	Soil	EPA 8270E	05/22/24 13:35	05/29/24 09:52	15.55g/2mL	15g/2mL	0.97
A4E1574-18RE1	Soil	EPA 8270E	05/22/24 13:40	05/29/24 09:52	15.16g/2mL	15g/2mL	0.99
A4E1574-19RE1	Soil	EPA 8270E	05/22/24 16:40	05/29/24 09:52	15.15g/2mL	15g/2mL	0.99
A4E1574-20	Soil	EPA 8270E	05/22/24 16:45	05/29/24 09:52	15.47g/2mL	15g/2mL	0.97
A4E1574-20RE1	Soil	EPA 8270E	05/22/24 16:45	05/29/24 09:52	15.47g/2mL	15g/2mL	0.97
A4E1574-21RE1	Soil	EPA 8270E	05/22/24 09:45	05/29/24 09:52	15.05g/2mL	15g/2mL	1.00
A4E1574-22RE1	Soil	EPA 8270E	05/22/24 10:00	05/29/24 09:52	15.71g/2mL	15g/2mL	0.96
A4E1574-23RE1	Soil	EPA 8270E	05/22/24 10:15	05/29/24 09:52	15.83g/2mL	15g/2mL	0.95
A4E1574-24	Soil	EPA 8270E	05/22/24 10:20	05/29/24 09:52	15.07g/2mL	15g/2mL	1.00
A4E1574-25RE1	Soil	EPA 8270E	05/22/24 10:30	05/29/24 09:52	15.69g/2mL	15g/2mL	0.96
A4E1574-26RE2	Soil	EPA 8270E	05/22/24 11:00	05/29/24 09:52	15.76g/2mL	15g/2mL	0.95
A4E1574-27RE2	Soil	EPA 8270E	05/22/24 11:10	05/29/24 09:52	15.42g/2mL	15g/2mL	0.97

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24F0030							
A4E1574-01	Water	EPA 6020B	05/21/24 16:30	06/03/24 12:50	45mL/50mL	45mL/50mL	1.00

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

<u>Prep: EPA 3015A</u>					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
A4E1574-02	Water	EPA 6020B	05/22/24 18:55	06/03/24 12:50	45mL/50mL	45mL/50mL	1.00
A4E1574-03	Water	EPA 6020B	05/22/24 14:25	06/03/24 12:50	45mL/50mL	45mL/50mL	1.00
A4E1574-04	Water	EPA 6020B	05/22/24 14:30	06/03/24 12:50	45mL/50mL	45mL/50mL	1.00
A4E1574-07	Water	EPA 6020B	05/22/24 17:30	06/03/24 12:50	45mL/50mL	45mL/50mL	1.00
A4E1574-34	Water	EPA 6020B	05/22/24 17:07	06/03/24 12:50	45mL/50mL	45mL/50mL	1.00
A4E1574-34RE1	Water	EPA 6020B	05/22/24 17:07	06/03/24 12:50	45mL/50mL	45mL/50mL	1.00

<u>Prep: EPA 3051A</u>					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 24E0996</u>							
A4E1574-21	Soil	EPA 6020B	05/22/24 09:45	05/29/24 10:15	0.504g/50mL	0.5g/50mL	0.99
A4E1574-22	Soil	EPA 6020B	05/22/24 10:00	05/29/24 10:15	0.458g/50mL	0.5g/50mL	1.09
A4E1574-23	Soil	EPA 6020B	05/22/24 10:15	05/29/24 10:15	0.473g/50mL	0.5g/50mL	1.06
A4E1574-24	Soil	EPA 6020B	05/22/24 10:20	05/29/24 10:15	0.487g/50mL	0.5g/50mL	1.03
A4E1574-25	Soil	EPA 6020B	05/22/24 10:30	05/29/24 10:15	0.464g/50mL	0.5g/50mL	1.08
A4E1574-26	Soil	EPA 6020B	05/22/24 11:00	05/29/24 10:15	0.508g/50mL	0.5g/50mL	0.98
A4E1574-27	Soil	EPA 6020B	05/22/24 11:10	05/29/24 10:15	0.452g/50mL	0.5g/50mL	1.11

Percent Dry Weight

<u>Prep: Total Solids (Dry Weight) - 2022</u>					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 24E0959</u>							
A4E1574-08	Soil	EPA 8000D	05/21/24 15:50	05/28/24 09:46			NA
A4E1574-09	Soil	EPA 8000D	05/21/24 15:55	05/28/24 09:46			NA
A4E1574-10	Soil	EPA 8000D	05/21/24 16:50	05/28/24 09:46			NA
A4E1574-11	Soil	EPA 8000D	05/21/24 16:55	05/28/24 09:46			NA
A4E1574-12	Soil	EPA 8000D	05/22/24 15:12	05/28/24 09:46			NA
A4E1574-13	Soil	EPA 8000D	05/22/24 15:25	05/28/24 09:46			NA
A4E1574-14	Soil	EPA 8000D	05/22/24 15:20	05/28/24 09:46			NA
A4E1574-15	Soil	EPA 8000D	05/22/24 12:23	05/28/24 09:46			NA
A4E1574-16	Soil	EPA 8000D	05/22/24 12:44	05/28/24 09:46			NA
A4E1574-17	Soil	EPA 8000D	05/22/24 13:35	05/28/24 09:46			NA
A4E1574-18	Soil	EPA 8000D	05/22/24 13:40	05/28/24 09:46			NA
A4E1574-19	Soil	EPA 8000D	05/22/24 16:40	05/28/24 09:46			NA
A4E1574-20	Soil	EPA 8000D	05/22/24 16:45	05/28/24 09:46			NA
A4E1574-21	Soil	EPA 8000D	05/22/24 09:45	05/28/24 09:46			NA

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ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight) - 2022

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A4E1574-22	Soil	EPA 8000D	05/22/24 10:00	05/28/24 09:46			NA
A4E1574-23	Soil	EPA 8000D	05/22/24 10:15	05/28/24 09:46			NA
A4E1574-24	Soil	EPA 8000D	05/22/24 10:20	05/28/24 09:46			NA
A4E1574-25	Soil	EPA 8000D	05/22/24 10:30	05/28/24 09:46			NA
A4E1574-26	Soil	EPA 8000D	05/22/24 11:00	05/28/24 09:46			NA
A4E1574-27	Soil	EPA 8000D	05/22/24 11:10	05/28/24 09:46			NA

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

- C-07** Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
- DCNT** Sample decanted due to the presence of sediment. Sample bottle not rinsed with solvent.
- E** Estimated Value. The result is above the calibration range of the instrument.
- F-03** The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
- F-09** Results in the Gasoline Range are impacted by the overlap of a heavier fuel hydrocarbon product.
- F-11** The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component.
- F-12** The result for this hydrocarbon range is primarily due to the presence of individual analyte peaks in the quantitation range. No fuel pattern detected.
- F-13** The chromatographic pattern does not resemble the fuel standard used for quantitation
- F-17** No fuel pattern detected. The Diesel result represents carbon range C10 to C25, and the Oil result represents >C25 to C40.
- M-05** Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
- PRES** Incomplete field preservation. Additional preservative was added to adjust the pH within the appropriate range for this analysis.
- Q-04** Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
- Q-05** Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
- Q-16** Reanalysis of an original Batch QC sample.
- Q-19** Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
- Q-29** Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
- Q-37** Sample results are less than the Reporting Level (MDL and/or MRL) and Duplicate results exceed this level. See QC Section of the report for Duplicate results. Sample may be non-homogenous, or results may bracket the reporting level.
- Q-41** Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
- Q-65** Spike recovery is estimated due to the high analyte concentration of the source sample.
- R-04** Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.
- S-05** Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
- S-06** Surrogate recovery is outside of established control limits.

Apex Laboratories

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

- DET Analyte DETECTED at or above the detection or reporting limit.
- ND Analyte NOT DETECTED at or above the detection or reporting limit.
- NR Result Not Reported
- RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

- Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.
- " dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
 - " wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
 - " " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.
- Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

- " --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- " *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

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ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to one half of the Reporting Limit (RL). Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.

- For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
- For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

- Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

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ANALYTICAL REPORT

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Table with 3 columns: Client (Terraphase Engineering), Project (Highway 101 Former Mill Site), and Report ID (A4E1574 - 06 19 24 1423).

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) -
EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Table header with columns: Matrix, Analysis, TNI_ID, Analyte, TNI_ID, Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation. Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Handwritten signature of Darrell Auvil

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

Company: Terraphase Engineering Inc. Project Mgr: James Farrow
Address: 610 SW Broadway Suite 406 Portland OR 97205
Sampled by: Don Murray and Alvinne Vuong
Site Location: State: Oregon County: Tillamook

CHAIN OF CUSTODY

Project Name: Highway 101 Former Mill Site
Project #: O053.009.003
PO #: O057.MA.003

Planner: (S) JF to GL
Email: james.farrow@terrphase.com

Lab # A4E1574 of 1
COC # AVZ-00000004
5/19/24

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	ANALYSIS REQUEST		Priority Metals (13)	RCRA Metals (8)	8081 Pesticides	8082 PCBs	8270 Semi-Volat Full List	8270 SVM PAHs + PCP	8260 VOCs Full List	8260 Halo VOCs	8260 RBDN VOCs	8260 BTEX	NWTPH-Gx	NWTPH-Dx	NWTPH-HCID	TCF Metals (8)	TOTAL DISS. Sol. Ag, Fe, TL, V, Zn	Hg, Mg, Mn, Mo, Ni, K, Ca, Cr, Cu, Fe, Pb, Al, Sb, As, Ba, Be, Cd, Co, Ni, Se, Si, Ti, V, Zn	Hold Sample	Frozen Archive	
					8270 SVM PAHs + PCP	8260 VOCs Full List																			8260 Halo VOCs
W5-SB-6-GW-10-15	5/21	1630	H2O	7	X			X			X														
W5-SB-1-GW-5-15	5/22	1455	H2O	8	X			X			X														
W5-SB-3-GW-10-20	5/22	1425	H2O	8	X			X			X														
W5-SB-3-GW-10-20-DUP	5/22	1430	H2O	8	X			X			X														
W5-SB-EB-2024 0521	5/21	1730	H2O	7	X						X														
W5-SB-EB-2024 0522	5/22	1745	H2O	7	X						X														
W5-RS-EB-2024 0523	5/22	1750	H2O	8	X						X														
W5-SB-2-0.0-5.0	5/21	1530	Sol	4	X						X														
W5-SB-2-5.0-7.0	5/21	1555	Sol	4	X						X														
W5-SB-4-0.0-5.0	5/21	1620	Sol	4	X						X														

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day 2 Day 3 Day 5 Day Standard Other: _____

RELINQUISHED BY:
Signature: Alvinne Vuong Date: 5-23-24
Printed Name: Alvinne Vuong Time: 1620
Company: Terraphase

RECEIVED BY:
Signature: James Farrow Date: 5-23-24
Printed Name: James Farrow Time: 1630
Company: WPS

RECEIVED BY:
Signature: James Farrow Date: 5/24/24
Printed Name: James Farrow Time: 1031
Company: Apex

Form X-CO2 R-00

Apex Laboratories

Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering Project: Highway 101 Former Mill Site
610 SW Broadway #406 Project Number: **O053.009.003**
Portland, OR 97205 Project Manager: **James Farrow** **Report ID:**
A4E1574 - 06 19 24 1423

CHAIN OF CUSTODY

APEX LABS 6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323 Lab # 1574 OCC 3 of 4

Company: Terraphase Engineering, Inc. Project Mgr: James Farrow Project Name: Highway 101 Former Mill Site Project #: O053.009.003
Address: 610 SW Broadway Suite 406 Portland OR Phone: (503) 884-1067 Email: James.Farrow@terrphase.com PO # O053.009.003

Supplied by: Don Matthews and Adrienne Vonneggs

Site Location: State Oregon County: Tillamook

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTFPH-DX	NWTFPH-GX	8260 RTRFX	8269 RADM VOCs	8269 Halo VOCs	8270 VOCs Full List	8270 STM PAHs & P	8270 Semi-Volat Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	As, Sb, Ar, Ba, Bi, Br, Ca, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Ni, Mo, Ni, P, Se, Si, Ti, V, Zn	TOTAL DMS, TOLF	TCLE Metals (8)	Diexms + Mutms	Hold Sample	Frozen Archive	
																							X
WS-RS-1-0-1	5/12	0945	Soil	4	X					X					X								
WS-RS-1-2-3	5/12	1000	Soil	4	X					X					X								
WS-RS-2-0-1	5/12	1015	Soil	4	X					X					X								
WS-RS-2-0-1-DUP	5/12	1020	Soil	4	X					X					X								
WS-RS-2-2-3	5/12	1030	Soil	4	X					X					X								
WS-RS-3-0-1	5/12	1100	Soil	4	X					X					X								
WS-RS-3-2-3	5/12	1110	Soil	4	X					X					X								
WS-IMS-0-0.5	5/12	1750	Soil	3																			
WS-IMS-0-0.5-DUP	5/12	0945	Soil	3																			
WS-IMS-0-0.5-REP	5/23	1150	Soil	3																			

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle) 1 Day 2 Day 3 Day 5 Day Standard Other: _____

RECEIVED BY: Date: 5-23-24 Signature: Charbonneau Date: 5-23-24 Signature: [Signature] Date: 5/23/24 Signature: [Signature]

PRINTED NAME: Adrienne Vonneggs Charbonneau Charbonneau Charbonneau Charbonneau

TIME: 1615 1620 1630 1630 1631

COMPANY: Terraphase Apex Apex Apex Apex

Form Y-002 R-00

Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
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APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # **A4E1574** of **4**

Project Name: **Highway 101 Former Mill Site** Project # **O053.009.003**

Company: **Terraphase Engineering, Inc.** Project Mgr: **James Farrow**

Address: **610 SW Broadway #406, Portland, OR 97205** Email: **James.Farrow@Terraphase.com** PO # **11**

Phone: **503-497-1674**

Sampled by: **Antoine Venegeas and Darrell Auvil**

Site Location: **Site Oregon**
County Tillamook

SAMPLE ID: **WS-68-5-GV-10-20** DATE: **5/23/24** TIME: **10:7 H:0**

OF CONTAINERS: **6** MATRIX: **H₂O**

ANALYSIS REQUEST:

Item	Requested	Received
Priority Metals (13)		
RCRA Metals (8)	<input checked="" type="checkbox"/>	
8091 Pesticides		
8092 PCBs		
8270 Semi-Volat Full List		
8270 SIM PAHs + RP	<input checked="" type="checkbox"/>	
8260 VOCs Full List		
8260 Halo VOCs		
8260 RBDM VOCs		
8260 RTEX		
NWTPH-GX		
NWTPH-DX		
NWTPH-CD	<input checked="" type="checkbox"/>	
TOTAL DISS. (8)		
Se. Ag. Na, TL, V, Zn		
Hg, Mn, Mo, Ni, Pb		
Cd, Cr, Cu, Fe, Pb		
Al, Sb, Ag, Ba, Be, Cd		
TC1P Metals (8)		
Frozen Archive		
Total Sample		

SPECIAL INSTRUCTIONS:

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): **1 Day** 2 Day 3 Day 5 Day Other: _____

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:
Signature: Antoine Venegeas Date: 5/23/24	Signature: Chaswell Date: 5/23/24
Printed Name: Antoine Venegeas Time: 16:15	Printed Name: Chaswell Time: 16:20
Company: Terraphase	Company: WPS

RELINQUISHED BY: Signature: **Chaswell** Date: **5/23/24** Time: **16:20**

RECEIVED BY: Signature: **WPS** Date: **5/23/24** Time: **16:20**

Printed Name: **WPS** Company: **Apex**

Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: 0053.009.003 Project Manager: James Farrow	Report ID: A4E1574 - 06 19 24 1423
---	---	--

APEX LABS COOLER RECEIPT FORM

Client: Terraphase **Element WO#:** A4E1574

Project/Project #: Highway 101 Former Mill Site / 0053.009.003

Delivery Info:

Date/time received: 5/24/24 @ 1031 **By:** KRS

Delivered by: Apex Client ESS FedEx UPS Radio Morgan SDS Evergreen Other

From USDA Regulated Origin? Yes No

Cooler Inspection **Date/time inspected:** 5/24/24 @ 1031 **By:** KRS

Chain of Custody included? Yes No

Signed/dated by client? Yes No

Contains USDA Reg. Soils? Yes No Unsure (email RegSoils)

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	1.6	2.9	6.3	0.9	0.4		
Custody seals? (Y/N)	Y						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	In						

Cooler out of temp? (Y/N) Possible reason why: _____

Green dots applied to out of temperature samples? Yes No

Out of temperature samples form initiated? Yes No

Sample Inspection: **Date/time inspected:** 5/24/24 @ 1138 **By:** KRS

All samples intact? Yes No **Comments:** 1/2 VP Amber broke in transit to the lab for WS-SB-EB-101522.

Bottle labels/COCs agree? Yes No **Comments:** 1/2 MeOH VOA's read WS-SB-2-0-1, DOP, Col reads WS-SB-1-01-DUPB matched by DIT. ~~rechecked~~ ~~found~~

COC/container discrepancies form initiated? Yes No

Containers/volumes received appropriate for analysis? Yes No **Comments:** _____

At limited volume, 1/2 IL VP Amber is 1/2 full. For WS-SB-6-GW-10-15.

Do VOA vials have visible headspace? Yes No NA

Comments: _____

Water samples: pH checked: Yes No NA **pH appropriate?** Yes No NA **pH ID:** A23172

Comments: _____

12 946 X38 03 1191 2634

Labeled by:
[Signature]

Witness:
[Signature]

Cooler Inspected by:
[Signature]

Form Y-003 R-02

Apex Laboratories

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[Signature]

Darrell Auvil, Client Services Manager



CERES Analytical Laboratory, Inc.

4919 Windplay Dr Suite 1, El Dorado Hills, CA 95762



June 20, 2024

Ceres ID: 17958-Rev1

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223

The following report contains the results for the three soil samples received on May 31, 2024. These samples were analyzed for tetra through octa chlorinated dioxins and dibenzofurans by EPA method 1613. Standard 2-week turn-around time was provided for this work.

Sample results are reported on a dry weight basis.

This work was authorized under Apex Laboratories' Project # A4E1574.

Revisions consisted of removing the ND on 2,3,7,8-TCDD for samples -002 and -003.

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

The report consists of a Cover Letter, Sample Inventory (Section I), Data Summary (Section II), Sample Tracking (Section VI), and Qualifiers/Abbreviations (Section VII). Raw Data (Section III), Continuing Calibration (Section IV), and Initial Calibration (Section V) are available in a full report (.pdf format) upon request.

If you have any questions regarding this report, please feel free to contact me at (916)932-5011.

Sincerely,

James M. Hedin
Director of Operations/CEO
jhedin@ceres-lab.com

Section I: Sample Inventory

<u>Ceres Sample ID:</u>	<u>Sample ID</u>	<u>Date Received</u>	<u>Collection Date & Time</u>
17958-001	WS-IMS-0-0.5 (A4E1574-29)	5/31/2024	5/22/2024 17:50
17958-002	WS-IMS-0-0.5-DUP (A4E1574-31)	5/31/2024	5/23/2024 9:45
17958-003	WS-IMS-0-0.5-TRP (A4E1574-33)	5/31/2024	5/23/2024 11:50

Section II: Data Summary



EPA Method 1613

Quality Assurance Sample Method Blank	QC Batch #: 3182 Matrix: Soil Sample Size: 10.00 g	Date Received: NA Date Extracted: 6/5/2024 Date Analyzed: 6/6/2024
Project ID: A4E1574		

Analyte	Conc. (pg/g)	MDL	RL	Qual.	Labeled Standards	% R	LCL-UCL (a)	Qualifiers
2,3,7,8-TCDD	ND< 0.373	0.183	0.500		13C-2378-TCDD	74.6	25-164	
12378-PeCDD	ND< 0.630	1.75	2.50		13C-12378-PeCDD	114	25-181	
123478-HxCDD	ND< 1.29	1.02	2.50		13C-123478-HxCDD	85.2	32-141	
123678-HxCDD	ND< 1.25	0.881	2.50		13C-123678-HxCDD	86	28-130	
123789-HxCDD	ND< 1.23	1.10	2.50		13C-1234678-HpCDD	123	23-140	
1234678-HpCDD	ND< 0.885	0.736	2.50		13C-OCDD	90.5	17-157	
OCDD	ND< 2.27	3.36	5.00		13C-2378-TCDF	95.6	24-169	
2,3,7,8-TCDF	ND< 0.312	0.272	0.500		13C-12378-PeCDF	115	24-185	
12378-PeCDF	ND< 0.480	0.696	2.50		13C-23478-PeCDF	103	21-178	
23478-PeCDF	ND< 0.454	0.912	2.50		13C-123478-HxCDF	113	26-152	
123478-HxCDF	ND< 0.618	1.35	2.50		13C-123678-HxCDF	124	26-123	
123678-HxCDF	ND< 0.594	0.769	2.50		13C-234678-HxCDF	115	28-136	
234678-HxCDF	ND< 0.696	0.865	2.50		13C-123789-HxCDF	104.0	29-147	
123789-HxCDF	ND< 0.788	1.12	2.50		13C-1234678-HpCDF	115.0	28-143	
1234678-HpCDF	ND< 0.501	0.794	2.50		13C-1234789-HpCDF	91.6	26-138	
1234789-HpCDF	ND< 0.866	1.22	2.50					
OCDF	ND< 1.96	3.15	5.00					
Totals	Conc. (pg/g)	EMPC			CRS			
Total TCDD	ND< 0.373				37CI4-2378-TCDD	64.7	35-197	
Total PeCDD	ND< 0.630							
Total HxCDD	ND< 1.29							DL - Signifies Non-Detect (ND<) sample specific detection limit.
Total HpCDD	ND< 0.885							EMPC - Estimated Maximum Possible Concentration due to ion abundance ratio failure.
Total TCDF	ND< 0.312							(a) - Lower control limit - Upper control limit
Total PeCDF	ND< 0.480							(b) - TEQ based on (2005) World Health Organization (WHO) Toxic Equivalent Factors.
Total HxCDF	ND< 0.788							
Total HpCDF	ND< 0.866							

Total Toxic Equivalency (TEQ min.) (b):	0.0 pg/g
--	----------

Analyst: JMH

Reviewed by: BS



EPA Method 1613B

Quality Assurance Sample Ongoing Precision and Recovery	QC Batch #: 3182 Matrix: Soil Sample Size: 10.00 g	Date Received: NA Date Extracted: 6/5/2024 Date Analyzed: 6/6/2024
Project ID: A4E1574		

Analyte	Conc. (ng/mL)	Limits (a)	Labeled Standards	% Rec.	Limits (a)
2,3,7,8-TCDD	10.7	6.7-15.8	13C-2378-TCDD	78.9	20-175
12378-PeCDD	46.6	35-71	13C-12378-PeCDD	94.4	21-227
123478-HxCDD	52.4	35-82	13C-123478-HxCDD	90.2	21-193
123678-HxCDD	61.4	38-67	13C-123678-HxCDD	91.6	25-163
123789-HxCDD	53.3	32-81	13C-1234678-HpCDD	103	26-166
1234678-HpCDD	48.8	35-70	13C-OCDD	82.6	13-198
OCDD	116	78-144	13C-2378-TCDF	79.1	22-152
2,3,7,8-TCDF	8.50	7.5-15.8	13C-12378-PeCDF	91.5	21-192
12378-PeCDF	42.2	40-67	13C-23478-PeCDF	83.9	13-328
23478-PeCDF	40.0	34-80	13C-123478-HxCDF	97.5	19-202
123478-HxCDF	46.9	36-67	13C-123678-HxCDF	109	21-159
123678-HxCDF	47.1	42-65	13C-234678-HxCDF	105	22-176
234678-HxCDF	46.9	35-78	13C-123789-HxCDF	92.4	17-205
123789-HxCDF	47.0	39-65	13C-1234678-HpCDF	98.2	21-158
1234678-HpCDF	42.7	41-61	13C-1234789-HpCDF	79.7	20-186
1234789-HpCDF	44.9	39-69			
OCDF	117	63-170			
			CRS		
			37Cl4-2378-TCDD	87.4	31-191
(a) Limits based on method acceptance criteria.					

Analyst: JMH

Reviewed by: BS



EPA Method 1613

Client Sample ID: WS-IMS-0-0.5 (A4E1574-29)		
Project ID: A4E1574	Ceres Sample ID: 17958-001	Date Received: 5/29/2024
Date Collected: 5/22/2024	QC Batch #: 3182	Date Extracted: 6/5/2024
Time Collected: 17:50	Matrix: Soil	Date Analyzed: 6/6/2024
	Sample Size: 10.39 g	% Solid: 96.5

Analyte	Conc. (pg/g)	MDL	RL	Qual.	Labeled Standards	% R	LCL-UCL (a)	Qualifiers
2,3,7,8-TCDD	2.11	0.183	0.499		13C-2378-TCDD	76.2	25-164	
12378-PeCDD	ND< 1.29	1.75	2.49		13C-12378-PeCDD	81.5	25-181	
123478-HxCDD	ND< 1.40	1.02	2.49		13C-123478-HxCDD	84.6	32-141	
123678-HxCDD	ND< 1.42	0.881	2.49		13C-123678-HxCDD	74.3	28-130	
123789-HxCDD	ND< 1.37	1.10	2.49		13C-1234678-HpCDD	67.1	23-140	
1234678-HpCDD	17.4	0.736	2.49		13C-OCDD	51.3	17-157	
OCDD	145	3.36	4.99		13C-2378-TCDF	72.1	24-169	
2,3,7,8-TCDF	ND< 0.413	0.272	0.499		13C-12378-PeCDF	80.8	24-185	
12378-PeCDF	ND< 0.638	0.696	2.49		13C-23478-PeCDF	69.3	21-178	
23478-PeCDF	ND< 0.641	0.912	2.49		13C-123478-HxCDF	69.3	26-152	
123478-HxCDF	ND< 0.471	1.35	2.49		13C-123678-HxCDF	73.0	26-123	
123678-HxCDF	ND< 0.477	0.769	2.49		13C-234678-HxCDF	71.8	28-136	
234678-HxCDF	ND< 0.511	0.865	2.49		13C-123789-HxCDF	63.5	29-147	
123789-HxCDF	ND< 0.609	1.12	2.49		13C-1234678-HpCDF	55.3	28-143	
1234678-HpCDF	1.83	0.794	2.49	J	13C-1234789-HpCDF	53.9	26-138	
1234789-HpCDF	ND< 0.838	1.22	2.49					
OCDF	5.19	3.15	4.99					
Totals	Conc. (pg/g)	EMPC			CRS			
Total TCDD	3.04				37CI4-2378-TCDD	90.8	35-197	
Total PeCDD	ND< 1.29				DL - Signifies Non-Detect (ND<) sample specific detection limit.			
Total HxCDD	3.40				EMPC - Estimated Maximum Possible Concentration due to ion abundance ratio failure.			
Total HpCDD	35.9				(a) - Lower control limit - Upper control limit			
Total TCDF	2.61				(b) - TEQ based on (2005) World Health Organization (WHO) Toxic Equivalent Factors.			
Total PeCDF	ND< 0.641							
Total HxCDF	2.04							
Total HpCDF	6.33							

Total Toxic Equivalency (TEQ min.) (b): 2.35 pg/g

Analyst: JMH

Reviewed by: BS



EPA Method 1613

Client Sample ID: WS-IMS-0-0.5-DUP (A4E1574-31)		
Project ID: A4E1574	Ceres Sample ID: 17958-002	Date Received: 5/29/2024
Date Collected: 5/24/2024	QC Batch #: 3182	Date Extracted: 6/5/2024
Time Collected: 9:45	Matrix: Soil	Date Analyzed: 6/6/2024
	Sample Size: 10.40 g	% Solid: 95.9

Analyte	Conc. (pg/g)	MDL	RL	Qual.	Labeled Standards	% R	LCL-UCL (a)	Qualifiers
2,3,7,8-TCDD	2.23	0.183	0.502		13C-2378-TCDD	79.2	25-164	
12378-PeCDD	ND< 1.43	1.75	2.51		13C-12378-PeCDD	78.6	25-181	
123478-HxCDD	ND< 1.33	1.02	2.51		13C-123478-HxCDD	74.3	32-141	
123678-HxCDD	1.81	0.881	2.51	J	13C-123678-HxCDD	77.1	28-130	
123789-HxCDD	ND< 1.30	1.10	2.51		13C-1234678-HpCDD	64.2	23-140	
1234678-HpCDD	77.3	0.736	2.51		13C-OCDD	54.7	17-157	
OCDD	963	3.36	5.02		13C-2378-TCDF	69.0	24-169	
2,3,7,8-TCDF	0.679	0.272	0.502		13C-12378-PeCDF	74.7	24-185	
12378-PeCDF	ND< 0.981	0.696	2.51		13C-23478-PeCDF	70.1	21-178	
23478-PeCDF	ND< 0.924	0.912	2.51		13C-123478-HxCDF	67.2	26-152	
123478-HxCDF	ND< 0.722	1.35	2.51		13C-123678-HxCDF	66.9	26-123	
123678-HxCDF	ND< 0.724	0.769	2.51		13C-234678-HxCDF	69.5	28-136	
234678-HxCDF	ND< 0.801	0.865	2.51		13C-123789-HxCDF	61.9	29-147	
123789-HxCDF	ND< 0.880	1.12	2.51		13C-1234678-HpCDF	53.0	28-143	
1234678-HpCDF	4.05	0.794	2.51		13C-1234789-HpCDF	54.8	26-138	
1234789-HpCDF	ND< 0.655	1.22	2.51					
OCDF	24.2	3.15	5.02					
Totals	Conc. (pg/g)	EMPC			CRS			
Total TCDD	3.18				37Cl4-2378-TCDD	91.2	35-197	
Total PeCDD	ND< 1.43				DL - Signifies Non-Detect (ND<) sample specific detection limit.			
Total HxCDD	6.05				EMPC - Estimated Maximum Possible Concentration due to ion abundance ratio failure.			
Total HpCDD	190				(a) - Lower control limit - Upper control limit			
Total TCDF	2.61				(b) - TEQ based on (2005) World Health Organization (WHO) Toxic Equivalent Factors.			
Total PeCDF	ND< 0.981							
Total HxCDF	5.37							
Total HpCDF	21.1							

Total Toxic Equivalency (TEQ min.) (b): 3.59 pg/g

Analyst: JMH

Reviewed by: BS



EPA Method 1613

Client Sample ID: WS-IMS-0-0.5-TRP (A4E1574-33)		
Project ID: A4E1574	Ceres Sample ID: 17958-003	Date Received: 5/29/2024
Date Collected: 5/24/2024	QC Batch #: 3182	Date Extracted: 6/5/2024
Time Collected: 11:50	Matrix: Soil	Date Analyzed: 6/7/2024
	Sample Size: 10.05 g	% Solid: 97.5

Analyte	Conc. (pg/g)	MDL	RL	Qual.	Labeled Standards	% R	LCL-UCL (a)	Qualifiers
2,3,7,8-TCDD	2.15	0.183	0.510		13C-2378-TCDD	76.5	25-164	
12378-PeCDD	ND< 1.93	1.75	2.55		13C-12378-PeCDD	82.3	25-181	
123478-HxCDD	ND< 1.33	1.02	2.55		13C-123478-HxCDD	95.6	32-141	
123678-HxCDD	2.15	0.881	2.55	J	13C-123678-HxCDD	63.6	28-130	
123789-HxCDD	ND< 1.29	1.10	2.55		13C-1234678-HpCDD	68.1	23-140	
1234678-HpCDD	34.8	0.736	2.55		13C-OCDD	53.6	17-157	
OCDD	289	3.36	5.10		13C-2378-TCDF	73.1	24-169	
2,3,7,8-TCDF	ND< 0.340	0.272	0.510		13C-12378-PeCDF	73.3	24-185	
12378-PeCDF	ND< 1.49	0.696	2.55		13C-23478-PeCDF	72.5	21-178	
23478-PeCDF	ND< 1.39	0.912	2.55		13C-123478-HxCDF	70.3	26-152	
123478-HxCDF	ND< 1.14	1.35	2.55		13C-123678-HxCDF	69.5	26-123	
123678-HxCDF	ND< 1.21	0.769	2.55		13C-234678-HxCDF	71.9	28-136	
234678-HxCDF	ND< 1.23	0.865	2.55		13C-123789-HxCDF	65.6	29-147	
123789-HxCDF	ND< 1.36	1.12	2.55		13C-1234678-HpCDF	50.1	28-143	
1234678-HpCDF	3.01	0.794	2.55		13C-1234789-HpCDF	54.1	26-138	
1234789-HpCDF	ND< 1.15	1.22	2.55					
OCDF	5.92	3.15	5.10					
Totals	Conc. (pg/g)	EMPC			CRS			
Total TCDD	2.73	3.38			37CI4-2378-TCDD	96.9	35-197	
Total PeCDD	ND< 1.93				DL - Signifies Non-Detect (ND<) sample specific detection limit.			
Total HxCDD	9.24				EMPC - Estimated Maximum Possible Concentration due to ion abundance ratio failure.			
Total HpCDD	65.6				(a) - Lower control limit - Upper control limit			
Total TCDF	2.71				(b) - TEQ based on (2005) World Health Organization (WHO) Toxic Equivalent Factors.			
Total PeCDF	ND< 1.49							
Total HxCDF	5.54							
Total HpCDF	9.26							

Total Toxic Equivalency (TEQ min.) (b): 2.83 pg/g

Analyst: JMH

Reviewed by: BS

Section VI: Sample Tracking

Sample Receipt Check List Logged by: l (initials)

Ceres ID: <u>17958</u>		Date/Time: <u>5/31/24 1130</u>
Client Project ID: <u>A4E1574</u>		Received Temp: <u>2.1</u> °C Acceptable: <input checked="" type="radio"/> Y / N
Chain of Custody Relinquished by signed?		<input checked="" type="radio"/> Y / N
Chain of Custody Received by signed?		<input checked="" type="radio"/> Y / N
Custody Seals?	Present?	Y / N
	Intact?	Y / N
	NA:	<input checked="" type="radio"/> NA
Unlabeled / Illegible Samples		Y <input checked="" type="radio"/> N
Proper Containers:		<input checked="" type="radio"/> Y / N
Preservation Acceptable (Chemical or <u>Temperature</u>)?		<input checked="" type="radio"/> Y / N
Drinking Water, Sodium Thiosulfate present? Residual Cl?		Y / N / <input checked="" type="radio"/> NA Y / N / <input checked="" type="radio"/> NA
Aqueous sample pH: _____		<input checked="" type="radio"/> NA
List COC discrepancies: <u>l 5/31/24</u>		
List Damaged Samples: <u>l 5/31/24</u>		

Section VII: Qualifiers/Abbreviations

J	Concentration found below the lower quantitation limit but greater than zero.
B	Analyte present in the associated Method Blank.
E	Concentration found exceeds the Calibration range of the HRGC/HRMS.
D	This analyte concentration was calculated from a dilution.
X	The concentration found is the estimated maximum possible concentration due to chlorinated diphenyl ethers present in the sample.
H	Recovery limits exceeded. See cover letter.
*	Results taken from dilution.
I	Interference. See cover letter.
Conc.	Concentration Found
DL	Calculated Detection Limit
ND	Non-Detect
% Rec.	Percent Recovery



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Monday, June 17, 2024

James Farrow
Terraphase Engineering
610 SW Broadway #406
Portland, OR 97205

RE: A4E1625 - Highway 101 Former Mill Site - O053.009.003

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4E1625, which was received by the laboratory on 5/28/2024 at 7:39:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information	
<p><u>Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.</u></p> <p>(See Cooler Receipt Form for details)</p>	
<p>Default Cooler</p> <hr style="width: 25%; margin-left: 0;"/>	<p>1.9 degC</p>

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.

Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
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ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WS-SB-2-GW-15-20	A4E1625-01	Water	05/22/24 17:20	05/28/24 07:39
WS-SB-4-GW-15-20	A4E1625-02	Water	05/22/24 13:07	05/28/24 07:39

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ANALYTICAL REPORT

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
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ANALYTICAL SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
WS-SB-2-GW-15-20 (A4E1625-01)			Matrix: Water			Batch: 24E1027			
Gasoline Range Organics	ND	---	0.106	mg/L	1	05/30/24 03:29	NWTPH-HCID		
Diesel Range Organics	ND	---	0.266	mg/L	1	05/30/24 03:29	NWTPH-HCID		
Oil Range Organics	ND	---	0.266	mg/L	1	05/30/24 03:29	NWTPH-HCID		
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 91 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/30/24 03:29</i>	<i>NWTPH-HCID</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>39 %</i>		<i>10-120 %</i>		<i>1</i>	<i>05/30/24 03:29</i>	<i>NWTPH-HCID</i>	
WS-SB-4-GW-15-20 (A4E1625-02)			Matrix: Water			Batch: 24E1027			DCNT
Gasoline Range Organics	DET	---	0.114	mg/L	1	05/30/24 03:49	NWTPH-HCID		
Diesel Range Organics	ND	---	0.284	mg/L	1	05/30/24 03:49	NWTPH-HCID		
Oil Range Organics	ND	---	0.284	mg/L	1	05/30/24 03:49	NWTPH-HCID		
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>05/30/24 03:49</i>	<i>NWTPH-HCID</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>51 %</i>		<i>10-120 %</i>		<i>1</i>	<i>05/30/24 03:49</i>	<i>NWTPH-HCID</i>	

Apex Laboratories

Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
 Tigard, OR 97223
 503-718-2323
 ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
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ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-4-GW-15-20 (A4E1625-02)				Matrix: Water		Batch: 24F0242		H-01
Gasoline Range Organics	ND	---	0.100	mg/L	1	06/07/24 17:18	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery:</i>	<i>101 %</i>	<i>Limits:</i>	<i>50-150 %</i>	<i>1</i>	<i>06/07/24 17:18</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>			<i>106 %</i>	<i>50-150 %</i>	<i>1</i>	<i>06/07/24 17:18</i>	<i>NWTPH-Gx (MS)</i>	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
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ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-4-GW-15-20 (A4E1625-02)				Matrix: Water		Batch: 24F0242		H-01
Benzene	ND	---	0.200	ug/L	1	06/07/24 17:18	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	06/07/24 17:18	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	06/07/24 17:18	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	06/07/24 17:18	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 109 %</i>	<i>Limits: 80-120 %</i>	<i>1</i>	<i>06/07/24 17:18</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>			<i>97 %</i>	<i>80-120 %</i>	<i>1</i>	<i>06/07/24 17:18</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>			<i>101 %</i>	<i>80-120 %</i>	<i>1</i>	<i>06/07/24 17:18</i>	<i>EPA 8260D</i>	

Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
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ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-2-GW-15-20 (A4E1625-01)			Matrix: Water		Batch: 24E0999			
Acenaphthene	ND	---	0.0345	ug/L	1	05/29/24 20:03	EPA 8270E	
Acenaphthylene	ND	---	0.0345	ug/L	1	05/29/24 20:03	EPA 8270E	
Anthracene	ND	---	0.0345	ug/L	1	05/29/24 20:03	EPA 8270E	
Benz(a)anthracene	ND	---	0.0345	ug/L	1	05/29/24 20:03	EPA 8270E	
Benzo(a)pyrene	ND	---	0.0517	ug/L	1	05/29/24 20:03	EPA 8270E	
Benzo(b)fluoranthene	ND	---	0.0517	ug/L	1	05/29/24 20:03	EPA 8270E	
Benzo(k)fluoranthene	ND	---	0.0517	ug/L	1	05/29/24 20:03	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	0.0345	ug/L	1	05/29/24 20:03	EPA 8270E	
Chrysene	ND	---	0.0345	ug/L	1	05/29/24 20:03	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	0.0345	ug/L	1	05/29/24 20:03	EPA 8270E	
Fluoranthene	ND	---	0.0345	ug/L	1	05/29/24 20:03	EPA 8270E	
Fluorene	ND	---	0.0345	ug/L	1	05/29/24 20:03	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	0.0345	ug/L	1	05/29/24 20:03	EPA 8270E	
1-Methylnaphthalene	ND	---	0.0690	ug/L	1	05/29/24 20:03	EPA 8270E	
2-Methylnaphthalene	ND	---	0.0690	ug/L	1	05/29/24 20:03	EPA 8270E	
Naphthalene	ND	---	0.0690	ug/L	1	05/29/24 20:03	EPA 8270E	
Phenanthrene	ND	---	0.0345	ug/L	1	05/29/24 20:03	EPA 8270E	
Pyrene	0.0377	---	0.0345	ug/L	1	05/29/24 20:03	EPA 8270E	
Dibenzofuran	ND	---	0.0345	ug/L	1	05/29/24 20:03	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	0.345	ug/L	1	05/29/24 20:03	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 62 %</i>		<i>Limits: 44-120 %</i>		<i>1</i>	<i>05/29/24 20:03</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>42 %</i>		<i>44-120 %</i>		<i>1</i>	<i>05/29/24 20:03</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>24 %</i>		<i>10-133 %</i>		<i>1</i>	<i>05/29/24 20:03</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>63 %</i>		<i>50-134 %</i>		<i>1</i>	<i>05/29/24 20:03</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>34 %</i>		<i>19-120 %</i>		<i>1</i>	<i>05/29/24 20:03</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>77 %</i>		<i>43-140 %</i>		<i>1</i>	<i>05/29/24 20:03</i>	<i>EPA 8270E</i>

WS-SB-4-GW-15-20 (A4E1625-02)			Matrix: Water		Batch: 24E0999			
Acenaphthene	ND	---	0.0200	ug/L	1	05/29/24 20:36	EPA 8270E	
Acenaphthylene	ND	---	0.0200	ug/L	1	05/29/24 20:36	EPA 8270E	
Anthracene	ND	---	0.0200	ug/L	1	05/29/24 20:36	EPA 8270E	
Benz(a)anthracene	ND	---	0.0200	ug/L	1	05/29/24 20:36	EPA 8270E	
Benzo(a)pyrene	ND	---	0.0300	ug/L	1	05/29/24 20:36	EPA 8270E	
Benzo(b)fluoranthene	ND	---	0.0300	ug/L	1	05/29/24 20:36	EPA 8270E	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
---	---	---

ANALYTICAL SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-4-GW-15-20 (A4E1625-02)			Matrix: Water			Batch: 24E0999		
Benzo(k)fluoranthene	ND	---	0.0300	ug/L	1	05/29/24 20:36	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	0.0200	ug/L	1	05/29/24 20:36	EPA 8270E	
Chrysene	ND	---	0.0200	ug/L	1	05/29/24 20:36	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	0.0200	ug/L	1	05/29/24 20:36	EPA 8270E	
Fluoranthene	ND	---	0.0200	ug/L	1	05/29/24 20:36	EPA 8270E	
Fluorene	ND	---	0.0200	ug/L	1	05/29/24 20:36	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	0.0200	ug/L	1	05/29/24 20:36	EPA 8270E	
1-Methylnaphthalene	ND	---	0.0400	ug/L	1	05/29/24 20:36	EPA 8270E	
2-Methylnaphthalene	ND	---	0.0400	ug/L	1	05/29/24 20:36	EPA 8270E	
Naphthalene	ND	---	0.0400	ug/L	1	05/29/24 20:36	EPA 8270E	
Phenanthrene	ND	---	0.0200	ug/L	1	05/29/24 20:36	EPA 8270E	
Pyrene	ND	---	0.0200	ug/L	1	05/29/24 20:36	EPA 8270E	
Dibenzofuran	ND	---	0.0200	ug/L	1	05/29/24 20:36	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	0.200	ug/L	1	05/29/24 20:36	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>			<i>Recovery: 63 %</i>	<i>Limits: 44-120 %</i>	1	05/29/24 20:36	EPA 8270E	
<i>2-Fluorobiphenyl (Surr)</i>			<i>49 %</i>	<i>44-120 %</i>	1	05/29/24 20:36	EPA 8270E	
<i>Phenol-d6 (Surr)</i>			<i>22 %</i>	<i>10-133 %</i>	1	05/29/24 20:36	EPA 8270E	
<i>p-Terphenyl-d14 (Surr)</i>			<i>91 %</i>	<i>50-134 %</i>	1	05/29/24 20:36	EPA 8270E	
<i>2-Fluorophenol (Surr)</i>			<i>32 %</i>	<i>19-120 %</i>	1	05/29/24 20:36	EPA 8270E	
<i>2,4,6-Tribromophenol (Surr)</i>			<i>90 %</i>	<i>43-140 %</i>	1	05/29/24 20:36	EPA 8270E	

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ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WS-SB-2-GW-15-20 (A4E1625-01)				Matrix: Water				
Batch: 24F0030								
Arsenic	2.30	---	1.00	ug/L	1	06/03/24 19:38	EPA 6020B	
Chromium	2.61	---	2.00	ug/L	1	06/03/24 19:38	EPA 6020B	
Selenium	ND	---	1.00	ug/L	1	06/03/24 19:38	EPA 6020B	
WS-SB-2-GW-15-20 (A4E1625-01RE1)				Matrix: Water				
Batch: 24F0030								
Barium	142	---	20.0	ug/L	10	06/04/24 16:03	EPA 6020B	
Cadmium	ND	---	2.00	ug/L	10	06/04/24 16:03	EPA 6020B	R-04
Lead	ND	---	2.00	ug/L	10	06/04/24 16:03	EPA 6020B	R-04
Mercury	ND	---	0.800	ug/L	10	06/04/24 16:03	EPA 6020B	R-04
Silver	ND	---	2.00	ug/L	10	06/04/24 16:03	EPA 6020B	R-04
WS-SB-4-GW-15-20 (A4E1625-02)				Matrix: Water				
Batch: 24F0030								
Arsenic	ND	---	1.00	ug/L	1	06/03/24 19:45	EPA 6020B	
Cadmium	ND	---	0.200	ug/L	1	06/03/24 19:45	EPA 6020B	
Chromium	ND	---	2.00	ug/L	1	06/03/24 19:45	EPA 6020B	
Lead	ND	---	0.200	ug/L	1	06/03/24 19:45	EPA 6020B	
Mercury	ND	---	0.0800	ug/L	1	06/03/24 19:45	EPA 6020B	
Selenium	ND	---	1.00	ug/L	1	06/03/24 19:45	EPA 6020B	
Silver	ND	---	0.200	ug/L	1	06/03/24 19:45	EPA 6020B	
WS-SB-4-GW-15-20 (A4E1625-02RE1)				Matrix: Water				
Batch: 24F0030								
Barium	231	---	20.0	ug/L	10	06/04/24 16:14	EPA 6020B	

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
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QUALITY CONTROL (QC) SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E1027 - EPA 3510C (Fuels/Acid Ext.)						Water						
Blank (24E1027-BLK1)			Prepared: 05/29/24 12:03			Analyzed: 05/29/24 21:38						
<u>NWTPH-HCID</u>												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
Diesel Range Organics	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Oil Range Organics	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>38 %</i>		<i>10-120 %</i>		"						

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
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QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24F0242 - EPA 5030C						Water						
Blank (24F0242-BLK1)			Prepared: 06/07/24 10:20 Analyzed: 06/07/24 13:01									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 103 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>113 %</i>		<i>50-150 %</i>		<i>"</i>						
LCS (24F0242-BS2)			Prepared: 06/07/24 10:20 Analyzed: 06/07/24 12:34									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	0.463	---	0.100	mg/L	1	0.500	---	93	80-120%	---	---	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>101 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (24F0242-DUP1)			Prepared: 06/07/24 10:20 Analyzed: 06/07/24 16:50									
<u>QC Source Sample: Non-SDG (A4F0894-01)</u>												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	ND	---	---	---	30%	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 104 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>111 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (24F0242-DUP2)			Prepared: 06/07/24 10:20 Analyzed: 06/07/24 23:40									
<u>QC Source Sample: Non-SDG (A4F0979-16)</u>												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	ND	---	---	---	30%	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 108 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>115 %</i>		<i>50-150 %</i>		<i>"</i>						

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ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
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QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24F0242 - EPA 5030C												
Water												
Blank (24F0242-BLK1)												
Prepared: 06/07/24 10:20						Analyzed: 06/07/24 13:01						
<u>EPA 8260D</u>												
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Xylenes, total	ND	---	1.50	ug/L	1	---	---	---	---	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 115 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>103 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>		<i>"</i>						
LCS (24F0242-BS1)												
Prepared: 06/07/24 10:20						Analyzed: 06/07/24 11:59						
<u>EPA 8260D</u>												
Benzene	20.9	---	0.200	ug/L	1	20.0	---	105	80-120%	---	---	
Toluene	19.4	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
Ethylbenzene	21.0	---	0.500	ug/L	1	20.0	---	105	80-120%	---	---	
Xylenes, total	60.6	---	1.50	ug/L	1	60.0	---	101	80-120%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>93 %</i>		<i>80-120 %</i>		<i>"</i>						
Duplicate (24F0242-DUP1)												
Prepared: 06/07/24 10:20						Analyzed: 06/07/24 16:50						
<u>QC Source Sample: Non-SDG (A4F0894-01)</u>												
Benzene	ND	---	0.200	ug/L	1	---	ND	---	---	---	30%	
Toluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Xylenes, total	ND	---	1.50	ug/L	1	---	ND	---	---	---	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 116 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>"</i>						
Duplicate (24F0242-DUP2)												
Prepared: 06/07/24 10:20						Analyzed: 06/07/24 23:40						
<u>QC Source Sample: Non-SDG (A4F0979-16)</u>												
Benzene	0.830	---	0.200	ug/L	1	---	0.840	---	---	1	30%	
Toluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	

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ANALYTICAL REPORT

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
---	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 24F0242 - EPA 5030C						Water							
Duplicate (24F0242-DUP2)			Prepared: 06/07/24 10:20			Analyzed: 06/07/24 23:40							
QC Source Sample: Non-SDG (A4F0979-16)													
Ethylbenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%		
Xylenes, total	ND	---	1.50	ug/L	1	---	ND	---	---	---	30%		
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 118 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>							
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>"</i>							
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>"</i>							
Matrix Spike (24F0242-MS1)						Prepared: 06/07/24 10:20					Analyzed: 06/08/24 00:35		H-01, T-02
QC Source Sample: WS-SB-4-GW-15-20 (A4E1625-02)													
EPA 8260D													
Benzene	22.0	---	0.200	ug/L	1	20.0	ND	110	79-120%	---	---		
Toluene	19.6	---	1.00	ug/L	1	20.0	ND	98	80-121%	---	---		
Ethylbenzene	20.7	---	0.500	ug/L	1	20.0	ND	104	79-121%	---	---		
Xylenes, total	60.4	---	1.50	ug/L	1	60.0	ND	101	79-121%	---	---		
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 109 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>							
<i>Toluene-d8 (Surr)</i>		<i>96 %</i>		<i>80-120 %</i>		<i>"</i>							
<i>4-Bromofluorobenzene (Surr)</i>		<i>92 %</i>		<i>80-120 %</i>		<i>"</i>							

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
---	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0999 - EPA 3510C (Acid Extraction)						Water						
Blank (24E0999-BLK1)						Prepared: 05/29/24 05:42 Analyzed: 05/29/24 12:39						
<u>EPA 8270E</u>												
Acenaphthene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Chrysene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Fluoranthene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Fluorene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	
Phenanthrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Pyrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Carbazole	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 90 %</i>		<i>Limits: 44-120 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>73 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>27 %</i>		<i>10-133 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>106 %</i>		<i>50-134 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>42 %</i>		<i>19-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>84 %</i>		<i>43-140 %</i>		<i>"</i>						

LCS (24E0999-BS1)						Prepared: 05/29/24 05:42 Analyzed: 05/29/24 13:14						
<u>EPA 8270E</u>												
Acenaphthene	3.70	---	0.0800	ug/L	4	4.00	---	93	47-122%	---	---	
Acenaphthylene	4.04	---	0.0800	ug/L	4	4.00	---	101	41-130%	---	---	
Anthracene	4.65	---	0.0800	ug/L	4	4.00	---	116	57-123%	---	---	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
---	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0999 - EPA 3510C (Acid Extraction)						Water						
LCS (24E0999-BS1)			Prepared: 05/29/24 05:42			Analyzed: 05/29/24 13:14						
Benz(a)anthracene	4.75	---	0.0800	ug/L	4	4.00	---	119	58-125%	---	---	
Benzo(a)pyrene	4.66	---	0.120	ug/L	4	4.00	---	117	54-128%	---	---	
Benzo(b)fluoranthene	4.90	---	0.120	ug/L	4	4.00	---	122	53-131%	---	---	
Benzo(k)fluoranthene	4.89	---	0.120	ug/L	4	4.00	---	122	57-129%	---	---	
Benzo(g,h,i)perylene	4.71	---	0.0800	ug/L	4	4.00	---	118	50-134%	---	---	
Chrysene	4.70	---	0.0800	ug/L	4	4.00	---	118	59-123%	---	---	
Dibenz(a,h)anthracene	4.72	---	0.0800	ug/L	4	4.00	---	118	51-134%	---	---	
Fluoranthene	4.82	---	0.0800	ug/L	4	4.00	---	120	57-128%	---	---	
Fluorene	4.49	---	0.0800	ug/L	4	4.00	---	112	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	4.58	---	0.0800	ug/L	4	4.00	---	115	52-134%	---	---	
1-Methylnaphthalene	2.86	---	0.160	ug/L	4	4.00	---	72	41-120%	---	---	
2-Methylnaphthalene	2.73	---	0.160	ug/L	4	4.00	---	68	40-121%	---	---	
Naphthalene	2.71	---	0.160	ug/L	4	4.00	---	68	40-121%	---	---	
Phenanthrene	4.52	---	0.0800	ug/L	4	4.00	---	113	59-120%	---	---	
Pyrene	4.72	---	0.0800	ug/L	4	4.00	---	118	57-126%	---	---	
Carbazole	4.97	---	0.120	ug/L	4	4.00	---	124	60-122%	---	---	Q-29
Dibenzofuran	4.14	---	0.0800	ug/L	4	4.00	---	103	53-120%	---	---	
Pentachlorophenol (PCP)	3.56	---	0.800	ug/L	4	4.00	---	89	35-138%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr) Recovery: 94 % Limits: 44-120 % Dilution: 4x</i>												
<i>2-Fluorobiphenyl (Surr) 87 % 44-120 % "</i>												
<i>Phenol-d6 (Surr) 29 % 10-133 % "</i>												
<i>p-Terphenyl-d14 (Surr) 115 % 50-134 % "</i>												
<i>2-Fluorophenol (Surr) 45 % 19-120 % "</i>												
<i>2,4,6-Tribromophenol (Surr) 111 % 43-140 % "</i>												

Matrix Spike (24E0999-MS1) Prepared: 05/29/24 05:42 Analyzed: 05/29/24 14:52

QC Source Sample: Non-SDG (A4E1520-01)

EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Acenaphthene	2.41	---	0.0825	ug/L	4	4.12	ND	58	47-122%	---	---	
Acenaphthylene	2.58	---	0.0825	ug/L	4	4.12	ND	63	41-130%	---	---	
Anthracene	3.42	---	0.0825	ug/L	4	4.12	ND	83	57-123%	---	---	
Benz(a)anthracene	3.88	---	0.0825	ug/L	4	4.12	ND	94	58-125%	---	---	
Benzo(a)pyrene	4.04	---	0.124	ug/L	4	4.12	ND	98	54-128%	---	---	
Benzo(b)fluoranthene	4.17	---	0.124	ug/L	4	4.12	ND	101	53-131%	---	---	

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ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
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Batch 24E0999 - EPA 3510C (Acid Extraction)

Water

Matrix Spike (24E0999-MS1)

Prepared: 05/29/24 05:42 Analyzed: 05/29/24 14:52

QC Source Sample: Non-SDG (A4E1520-01)

Benzo(k)fluoranthene	4.00	---	0.124	ug/L	4	4.12	ND	97	57-129%	---	---	
Benzo(g,h,i)perylene	3.79	---	0.0825	ug/L	4	4.12	ND	92	50-134%	---	---	
Chrysene	3.72	---	0.0825	ug/L	4	4.12	ND	90	59-123%	---	---	
Dibenz(a,h)anthracene	3.73	---	0.0825	ug/L	4	4.12	ND	90	51-134%	---	---	
Fluoranthene	3.80	---	0.0825	ug/L	4	4.12	ND	92	57-128%	---	---	
Fluorene	2.90	---	0.0825	ug/L	4	4.12	ND	70	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	3.76	---	0.0825	ug/L	4	4.12	ND	91	52-134%	---	---	
1-Methylnaphthalene	1.99	---	0.165	ug/L	4	4.12	ND	48	41-120%	---	---	
2-Methylnaphthalene	1.94	---	0.165	ug/L	4	4.12	ND	47	40-121%	---	---	
Naphthalene	1.81	---	0.165	ug/L	4	4.12	ND	44	40-121%	---	---	
Phenanthrene	3.42	---	0.0825	ug/L	4	4.12	ND	83	59-120%	---	---	
Pyrene	3.75	---	0.0825	ug/L	4	4.12	ND	91	57-126%	---	---	
Carbazole	3.94	---	0.124	ug/L	4	4.12	ND	96	60-122%	---	---	
Dibenzofuran	2.64	---	0.0825	ug/L	4	4.12	ND	64	53-120%	---	---	
Pentachlorophenol (PCP)	3.82	---	0.825	ug/L	4	4.12	ND	93	35-138%	---	---	

<i>Surr: Nitrobenzene-d5 (Surr)</i>	<i>Recovery: 56 %</i>	<i>Limits: 44-120 %</i>	<i>Dilution: 4x</i>
<i>2-Fluorobiphenyl (Surr)</i>	<i>51 %</i>	<i>44-120 %</i>	<i>"</i>
<i>Phenol-d6 (Surr)</i>	<i>20 %</i>	<i>10-133 %</i>	<i>"</i>
<i>p-Terphenyl-d14 (Surr)</i>	<i>90 %</i>	<i>50-134 %</i>	<i>"</i>
<i>2-Fluorophenol (Surr)</i>	<i>28 %</i>	<i>19-120 %</i>	<i>"</i>
<i>2,4,6-Tribromophenol (Surr)</i>	<i>88 %</i>	<i>43-140 %</i>	<i>"</i>

Matrix Spike Dup (24E0999-MSD1)

Prepared: 05/29/24 05:42 Analyzed: 05/29/24 15:27

QC Source Sample: Non-SDG (A4E1520-01)

Acenaphthene	2.66	---	0.0870	ug/L	4	4.35	ND	61	47-122%	10	30%	
Acenaphthylene	2.83	---	0.0870	ug/L	4	4.35	ND	65	41-130%	9	30%	
Anthracene	3.41	---	0.0870	ug/L	4	4.35	ND	78	57-123%	0.4	30%	
Benz(a)anthracene	3.63	---	0.0870	ug/L	4	4.35	ND	84	58-125%	7	30%	
Benzo(a)pyrene	3.85	---	0.130	ug/L	4	4.35	ND	89	54-128%	5	30%	
Benzo(b)fluoranthene	3.84	---	0.130	ug/L	4	4.35	ND	88	53-131%	8	30%	
Benzo(k)fluoranthene	3.74	---	0.130	ug/L	4	4.35	ND	86	57-129%	7	30%	
Benzo(g,h,i)perylene	3.47	---	0.0870	ug/L	4	4.35	ND	80	50-134%	9	30%	
Chrysene	3.52	---	0.0870	ug/L	4	4.35	ND	81	59-123%	6	30%	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0999 - EPA 3510C (Acid Extraction)						Water						
Matrix Spike Dup (24E0999-MSD1)						Prepared: 05/29/24 05:42 Analyzed: 05/29/24 15:27						
QC Source Sample: Non-SDG (A4E1520-01)												
Dibenz(a,h)anthracene	3.48	---	0.0870	ug/L	4	4.35	ND	80	51-134%	7	30%	
Fluoranthene	3.69	---	0.0870	ug/L	4	4.35	ND	85	57-128%	3	30%	
Fluorene	3.19	---	0.0870	ug/L	4	4.35	ND	73	52-124%	9	30%	
Indeno(1,2,3-cd)pyrene	3.42	---	0.0870	ug/L	4	4.35	ND	79	52-134%	10	30%	
1-Methylnaphthalene	2.16	---	0.174	ug/L	4	4.35	ND	50	41-120%	8	30%	
2-Methylnaphthalene	2.10	---	0.174	ug/L	4	4.35	ND	48	40-121%	8	30%	
Naphthalene	2.01	---	0.174	ug/L	4	4.35	ND	46	40-121%	10	30%	
Phenanthrene	3.39	---	0.0870	ug/L	4	4.35	ND	78	59-120%	0.8	30%	
Pyrene	3.60	---	0.0870	ug/L	4	4.35	ND	83	57-126%	4	30%	
Carbazole	3.78	---	0.130	ug/L	4	4.35	ND	87	60-122%	4	30%	
Dibenzofuran	2.94	---	0.0870	ug/L	4	4.35	ND	68	53-120%	11	30%	
Pentachlorophenol (PCP)	3.62	---	0.870	ug/L	4	4.35	ND	83	35-138%	5	30%	
<i>Surr: Nitrobenzene-d5 (Surr) Recovery: 59 % Limits: 44-120 % Dilution: 4x</i>												
<i>2-Fluorobiphenyl (Surr) 52 % 44-120 % "</i>												
<i>Phenol-d6 (Surr) 22 % 10-133 % "</i>												
<i>p-Terphenyl-d14 (Surr) 78 % 50-134 % "</i>												
<i>2-Fluorophenol (Surr) 30 % 19-120 % "</i>												
<i>2,4,6-Tribromophenol (Surr) 79 % 43-140 % "</i>												

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ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24F0030 - EPA 3015A												
Water												
Blank (24F0030-BLK1)												
						Prepared: 06/03/24 12:50 Analyzed: 06/03/24 17:27						
<u>EPA 6020B</u>												
Arsenic	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Barium	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Cadmium	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Chromium	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Mercury	ND	---	0.0800	ug/L	1	---	---	---	---	---	---	
Selenium	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Silver	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
LCS (24F0030-BS1)												
						Prepared: 06/03/24 12:50 Analyzed: 06/03/24 17:32						
<u>EPA 6020B</u>												
Arsenic	57.0	---	1.00	ug/L	1	55.6	---	103	80-120%	---	---	
Barium	58.3	---	2.00	ug/L	1	55.6	---	105	80-120%	---	---	
Cadmium	56.1	---	0.200	ug/L	1	55.6	---	101	80-120%	---	---	
Chromium	59.1	---	2.00	ug/L	1	55.6	---	106	80-120%	---	---	
Lead	55.4	---	0.200	ug/L	1	55.6	---	100	80-120%	---	---	
Mercury	1.06	---	0.0800	ug/L	1	1.11	---	95	80-120%	---	---	
Selenium	29.1	---	1.00	ug/L	1	27.8	---	105	80-120%	---	---	
Silver	29.9	---	0.200	ug/L	1	27.8	---	108	80-120%	---	---	
Duplicate (24F0030-DUP1)												
						Prepared: 06/03/24 12:50 Analyzed: 06/03/24 17:55						
<u>QC Source Sample: Non-SDG (A4E1566-01)</u>												
Arsenic	13.0	---	1.00	ug/L	1	---	12.3	---	---	5	20%	
Cadmium	1.32	---	0.200	ug/L	1	---	1.35	---	---	2	20%	
Chromium	43.2	---	2.00	ug/L	1	---	42.4	---	---	2	20%	
Selenium	21.7	---	1.00	ug/L	1	---	22.4	---	---	3	20%	
Silver	ND	---	0.200	ug/L	1	---	ND	---	---	---	20%	
Duplicate (24F0030-DUP2)												
						Prepared: 06/03/24 12:50 Analyzed: 06/04/24 15:52						
<u>QC Source Sample: Non-SDG (A4E1566-01RE1)</u>												
Barium	2210	---	20.0	ug/L	10	---	2180	---	---	1	20%	Q-16
Lead	14.6	---	2.00	ug/L	10	---	13.9	---	---	5	20%	Q-16

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24F0030 - EPA 3015A						Water						
Duplicate (24F0030-DUP2)						Prepared: 06/03/24 12:50 Analyzed: 06/04/24 15:52						
QC Source Sample: Non-SDG (A4E1566-01RE1)												
Mercury	ND	---	0.800	ug/L	10	---	ND	---	---	---	20%	Q-16
Matrix Spike (24F0030-MS1)						Prepared: 06/03/24 12:50 Analyzed: 06/03/24 18:06						
QC Source Sample: Non-SDG (A4E1566-03)												
EPA 6020B												
Arsenic	61.8	---	1.00	ug/L	1	55.6	4.48	103	75-125%	---	---	
Barium	298	---	2.00	ug/L	1	55.6	249	88	75-125%	---	---	E
Cadmium	57.9	---	0.200	ug/L	1	55.6	0.202	104	75-125%	---	---	
Chromium	71.2	---	2.00	ug/L	1	55.6	12.6	105	75-125%	---	---	
Lead	59.4	---	0.200	ug/L	1	55.6	6.11	96	75-125%	---	---	
Mercury	1.09	---	0.0800	ug/L	1	1.11	ND	98	75-125%	---	---	
Selenium	32.4	---	1.00	ug/L	1	27.8	3.28	105	75-125%	---	---	
Silver	30.1	---	0.200	ug/L	1	27.8	ND	108	75-125%	---	---	

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Darrell Auvil, Client Services Manager

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SAMPLE PREPARATION INFORMATION

Hydrocarbon Identification Screen by NWTPH-HCID

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24E1027</u>							
A4E1625-01	Water	NWTPH-HCID	05/22/24 17:20	05/29/24 12:03	940mL/5mL	1000mL/5mL	1.06
A4E1625-02	Water	NWTPH-HCID	05/22/24 13:07	05/29/24 12:03	880mL/5mL	1000mL/5mL	1.14

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24F0242</u>							
A4E1625-02	Water	NWTPH-Gx (MS)	05/22/24 13:07	06/07/24 14:06	5mL/5mL	5mL/5mL	1.00

BTEX Compounds by EPA 8260D

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24F0242</u>							
A4E1625-02	Water	EPA 8260D	05/22/24 13:07	06/07/24 14:06	5mL/5mL	5mL/5mL	1.00

Selected Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3510C (Acid Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24E0999</u>							
A4E1625-01	Water	EPA 8270E	05/22/24 17:20	05/29/24 05:42	580mL/1mL	1000mL/1mL	1.72
A4E1625-02	Water	EPA 8270E	05/22/24 13:07	05/29/24 05:42	1000mL/1mL	1000mL/1mL	1.00

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24F0030</u>							
A4E1625-01	Water	EPA 6020B	05/22/24 17:20	06/03/24 12:50	45mL/50mL	45mL/50mL	1.00
A4E1625-01RE1	Water	EPA 6020B	05/22/24 17:20	06/03/24 12:50	45mL/50mL	45mL/50mL	1.00
A4E1625-02	Water	EPA 6020B	05/22/24 13:07	06/03/24 12:50	45mL/50mL	45mL/50mL	1.00
A4E1625-02RE1	Water	EPA 6020B	05/22/24 13:07	06/03/24 12:50	45mL/50mL	45mL/50mL	1.00

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Darrell Auvil, Client Services Manager



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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
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QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

- DCNT** Sample decanted due to the presence of sediment. Sample bottle not rinsed with solvent.
- E** Estimated Value. The result is above the calibration range of the instrument.
- H-01** Analyzed outside the recommended holding time.
- Q-16** Reanalysis of an original Batch QC sample.
- Q-29** Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
- R-04** Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.
- S-06** Surrogate recovery is outside of established control limits.
- T-02** This Batch QC sample was analyzed outside of the method specified 12 hour analysis window. Results are estimated.

Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

- DET Analyte DETECTED at or above the detection or reporting limit.
- ND Analyte NOT DETECTED at or above the detection or reporting limit.
- NR Result Not Reported
- RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

- Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.
 - "dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
 - "wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
 - " " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.
- Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

- " --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- " *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to one half of the Reporting Limit (RL). Blank results for gravimetric analyses are evaluated to the Reporting Level, not to half of the Reporting Level.

- For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
- For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

- Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

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Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: O053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
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LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) -
EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
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All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation. Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # **A4E1625** COC | of 1

Company: Terraphase Engineering, Inc. Address: 610 SW Broadway Ste 406 Portland State: OR County: Washington	Project Name: Highway 101 Former Mill Site Project Mgr: James Farrow Phone: 503-894-1164 Email: James.Farrow@terrphase.com	Project #: O053-009-003 PO #: ~11	
Sampled by: Anthony Venegas & Dan Matthews Site Location: _____ State: OR County: Washington			
DATE	TIME	# OF CONTAINERS	ANALYSIS REQUEST
5-22	17:00	6	<input checked="" type="checkbox"/> 8270 SIM PAHs + PCB <input checked="" type="checkbox"/> 8260 VOCs Full List <input type="checkbox"/> 8260 Basic VOCs <input type="checkbox"/> 8260 BTEX <input type="checkbox"/> NVTPE-G <input type="checkbox"/> NVTPE-D <input type="checkbox"/> NVTPE-HCID
5-22	13:07	6	<input checked="" type="checkbox"/> 8270 Semi-Volat Full List <input type="checkbox"/> 8082 PCBs <input type="checkbox"/> 8081 Pesticides <input checked="" type="checkbox"/> RCRA Metals (8) <input checked="" type="checkbox"/> Priority Metals (13) AT, Sb, As, Ba, Bi, Br, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Mo, Ni, P, Se, Ag, Au, Ti, V, Zn TOTAL DISS. SOLIDS TCLP Metals (8)
Standard Turn Around Time (TAT) = 10 Business Days			
TAT Requested (circle): 1 Day 2 Day 3 Day 5 Day Standard Other: _____			
SPECIAL INSTRUCTIONS:			
RELINQUISHED BY: Signature: Anthony Venegas Printed Name: Anthony Venegas Company: Terraphase	RECEIVED BY: Signature: Julia Spier Printed Name: Julia Spier Company: Apex	Date: 5-20-24 Time: 07:39	Date: _____ Time: _____ Company: _____

Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

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6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

Terraphase Engineering 610 SW Broadway #406 Portland, OR 97205	Project: Highway 101 Former Mill Site Project Number: 0053.009.003 Project Manager: James Farrow	Report ID: A4E1625 - 06 17 24 1053
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APEX LABS COOLER RECEIPT FORM

Client: Terraphase Engineering Inc. Element WO#: A4 E1625 ANAL-FE-PAD SP112M

Project/Project #: Highway 101 Former Mill Site - 0053.009.003

Delivery Info:
Date/time received: 5/28/24 @ 7:39 By: JS
Delivered by: Apex Client FedEx UPS Radio Morgan SDS Evergreen Other
From USDA Regulated Origin? Yes No

Cooler Inspection Date/time inspected: 5/28/24 @ 7:42 By: JS
Chain of Custody included? Yes No
Signed/dated by client? Yes No
Contains USDA Reg. Soils? Yes No Unsure (email RegSoils)

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>1.9</u>						
Custody seals? (Y/N)	<u>N</u>						
Received on ice? (Y/N)	<u>Y</u>						
Temp. blanks? (Y/N)	<u>Y</u>						
Ice type: (Gel/Real/Other)	<u>Real</u>						
Condition (In/Out):	<u>In</u>						

Cooler out of temp? (Y/N) Possible reason why: _____
Green dots applied to out of temperature samples? Yes No
Out of temperature samples form initiated? Yes No SP112M

Sample Inspection: Date/time inspected: 5/28/24 @ 10:42 By: KAAB
All samples intact? Yes No Comments: anal for metals system

Bottle labels/COCs agree? Yes No Comments: _____

COC/container discrepancies form initiated? Yes No

Containers/volumes received appropriate for analysis? Yes No Comments: _____

Do VOA vials have visible headspace? Yes No NA

Comments: Secd 3/3 WS-SB-4-GW-15-20; 1/3 Secd WS-SB-2-GW-15-20
anal for metals system

Water samples: pH checked: Yes No NA pH appropriate? Yes No NA pH ID: A232172

Comments: HCl Ambers pH @ 7 for both samples - accept for system

Labeled by: KAAB Witness: JS Cooler Inspected by: KAAB
Form Y-003 R-02

Apex Laboratories

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Darrell Auvil, Client Services Manager

Appendix F

Data Validation Reports



Data Validation Report

Project Name: Highway 101 Former Mill Site

Lab Reference Number: A4E1513

Project Number: 0053.009.003	Laboratory: Apex Laboratories
Validated by: Marie Mueller	Matrix: Soil and Water
Sampling Date: 5/21/2024	Number of Samples: 11
Data Validation Report Date: 6/20/2024	Analytical Report Date: 6/19/2024

The quality control (QC) elements that were reviewed are listed below.

Data Package Completeness	1	Surrogate Compound Recovery	1
Verification of EDD to Hardcopy Data Package	√	Sample Duplicate Analysis	1
Chain-of-Custody and Sample Preservation	1	Blank Spike/Blank Spike Duplicate Sample Analyses	NA
Holding Times	√	Matrix Spike/Matrix Spike Duplicate Sample Analyses	1
Retention Time Windows	NE	Trip Blank Sample Analysis	NA
Initial Calibration	NE	Equipment Blank Sample Analysis	NA
Initial Calibration Verification	NE	Field Duplicate Sample Analysis	NA
Continuing Calibration	NE	Reference Material Analysis	NE
Method Blank Analysis	1	Compound Quantitation	2
Laboratory Control Samples	1		

√ – Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

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

2 – Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed in this Data Validation Report.

NA – Not applicable

NE – Not evaluated

P – Pending

Overall Assessment

All data, as qualified, are acceptable for use.

Data Package Completeness

The data package was received without a case narrative. The data package included all other required elements: chain-of-custody, sample receipt checklist, results, and QC results.

Verification of EDD to Hardcopy Data Package

Sample results and related quality control data were received in both an electronic and hardcopy format. Electronic data were verified against the laboratory report; no errors were found.

Chain-of-Custody

All sample identification (ID) numbers listed on the chain-of-custody record are consistent with the sample ID reported in the EDD and hardcopy data package.

Laboratory staff noted in the cooler receipt form, that "1/2 MCOH VOAs for WS-SB-7-5.0-7.5 reads time as 11:45" which differs from the chain of custody which indicates 12:45 as sample time.

Sample Preservation

Samples were received intact with cooler temperatures of 5.6, 5.8, and 1.4 degrees Celsius. Proper preservation includes samples chilled to ≤ 6.0 degrees Celsius.

Project and laboratory samples were flagged with "C-07" indicating extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.

Holding Times

All samples were analyzed within the holding time.

Retention Time Windows

Not evaluated.

Initial Calibration

Not evaluated.

Initial Calibration Verification

Not evaluated.

Continuing Calibration

Not evaluated.

Method Blank Analysis

No target compounds were detected in the method blank samples.

The method blank sample 24E1141-BLK3 in batch 24E1141, analyte results were under method detection limits, and were flagged by the laboratory with "Q-16" indicating reanalysis of an original Batch QC sample.



Laboratory Control Samples

In batch 24E0858, the laboratory control sample duplicate (LCSD) was “Q-19” flagged because the blank spike duplicate sample was analyzed in place of matrix spike/duplicate samples due to limited sample amount available for analysis.

The LCS, sample ID 24E1141-BS3, in batch 24E1141 was flagged with “Q-16” meaning there was reanalysis of an original Batch QC sample.

All percent recovery values for LCS/LCSDs were within acceptable criteria established by the laboratory for the respective testing methods.

Surrogate Compound Recovery

Sample WS-SB-9-0.0-3.5 surrogate decachlorobiphenyl was below the limits set by the laboratory and was flagged with “S-06” indicating surrogate recovery is outside of established control limits.

All other percent recovery values for surrogate compounds were within acceptable criteria established by the laboratory for the respective testing methods.

Sample Duplicate Analysis

Batch 24F0059 duplicate sample (24F0059-DUP1) oil range organics result was detected and flagged “F-03” indicating the result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.

Batch 24E0825 duplicate sample 24E0825-DUP1 analytes benzo(g,h,i)perylene and indeno(1,2,3-cd)pyrene results were flagged “Q-05” indicating analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.

Duplicate sample ID 24E1141-DUP4, in batch 24E1141 was flagged with “Q-16” meaning there was reanalysis of an original Batch QC sample.

Duplicate sample ID 24E0838-DUP6, in batch 24E0838 had a high RPD for percent dry weight.

All other RPDs for sample duplicates were within acceptable criteria established by the laboratory for the respective testing methods.

Blank Spike/Blank Spike Duplicate Sample Analyses

Blank spike and blank spike duplicate sample analyses were not performed for this sample batch.

Matrix Spike/Matrix Spike Duplicate Sample Analyses

In batch 24E1141, the matrix spike samples 24E1141-MS5 and 24E1141-MS6, had all analytes flagged “Q-16” by the laboratory indicating reanalysis of an original Batch QC sample.

All percent recoveries and for matrix spikes were within acceptable criteria established by the laboratory for the respective testing methods.



Trip Blank Sample Analysis

A trip blank sample was not collected for this sample batch.

Equipment Blank Sample Analysis

An equipment blank sample was not collected for this sample batch.

Field Duplicate Analysis

A field duplicate sample was not collected for this sample batch.

Reference Material Analysis

No reference material analysis was performed.

Compound Quantitation

The laboratory applied the following flags:

- R-02 The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.

Result for the following sample was R-02-flagged:

Sample Name	Analytes
WS-SB-9-0.0-3.5	Aroclor 1221

- F-03 The results for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.

Result for the following sample was F-03-flagged:

Sample Name	Analytes
WS-SB-9-0.0-3.5	Oil Range Organics (NWTPH-HCID)
WS-SB-9-0.0-3.5	Oil (NWTPH-Dx with Acid/Silica Gel Cleanup)
WS-SB-6-5.0-8.5	Oil (NWTPH-Dx with Acid/Silica Gel Cleanup)

- M-05 Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.

Result for the following sample was M-05-flagged:



Sample Name	Analytes
WS-SB-6-0.0-3.0	Benzo(k)fluoranthene
WS-SB-6-5.0-8.5	Chrysene
WS-SB-9-0.0-3.5	Benzo(k)fluoranthene
WS-SB-9-5.0-8.0	Benzo(k)fluoranthene

Sample Index

Sample Name	Lab ID	Matrix	Date Collected
WS-SB-6-0.0-3.0	A4E1513-01	Soil	5/21/2024
WS-SB-6-5.0-8.5	A4E1513-02	Soil	5/21/2024
WS-SB-7-1.0-2.5	A4E1513-03	Soil	5/21/2024
WS-SB-7-5.0-7.5	A4E1513-04	Soil	5/21/2024
WS-SB-8-0.0-3.5	A4E1513-05	Soil	5/21/2024
WS-SB-8-5.0-7.5	A4E1513-06	Soil	5/21/2024
WS-SB-9-0.0-3.5	A4E1513-07	Soil	5/21/2024
WS-SB-9-5.0-8.0	A4E1513-08	Soil	5/21/2024
WS-SB-7-GW-15-20	A4E1513-09	Water	5/21/2024
WS-SB-8-GW-9.5-14.5	A4E1513-10	Water	5/21/2024
WS-SB-9-GW-9-14	A4E1513-11	Water	5/21/2024

END OF REPORT



Data Validation Report

Project Name: Highway 101 Former Mill Site

Lab Reference Number: A4E1574

Project Number: 0053.009.003	Laboratory: Apex Laboratories and Ceres Analytical Laboratory, Inc.
Validated by: Marie Mueller	Matrix: Soil and Water
Sampling Date: 5/21/2024 – 5/23/2024	Number of Samples: 34
Data Validation Report Date: 6/20/2024	Analytical Report Date: 6/19/2024

The quality control (QC) elements that were reviewed are listed below.

Data Package Completeness	1	Surrogate Compound Recovery	1
Verification of EDD to Hardcopy Data Package	√	Sample Duplicate Analysis	1
Chain-of-Custody and Sample Preservation	2	Blank Spike/Blank Spike Duplicate Sample Analyses	NA
Holding Times	√	Matrix Spike/Matrix Spike Duplicate Sample Analyses	1
Retention Time Windows	NE	Trip Blank Sample Analysis	NA
Initial Calibration	NE	Equipment Blank Sample Analysis	1
Initial Calibration Verification	NE	Field Replicate Sample Analysis	1
Continuing Calibration	NE	Reference Material Analysis	NE
Method Blank Analysis	1	Compound Quantitation	2
Laboratory Control Samples	1		

√ – Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

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

2 – Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed in this Data Validation Report.

NA – Not applicable

NE – Not evaluated

P – Pending

Overall Assessment

All data, as qualified, are acceptable for use.

Data Package Completeness

The data package was received without a case narrative. The data package included all other required elements: chain-of-custody, sample receipt checklist, results, and QC results.

Verification of EDD to Hardcopy Data Package

Sample results and related quality control data were received in both an electronic and hardcopy format. Electronic data were verified against the laboratory report; no errors were found.

Chain-of-Custody

All sample identification (ID) numbers listed on the chain-of-custody record are consistent with the sample ID reported in the EDD and hardcopy data package.

Sample Preservation

Samples were received with cooler temperatures of 0.4, 0.9, 1.6, 2.9, and 5.3 degrees Celsius. Proper preservation includes samples chilled to ≤ 6.0 degrees Celsius.

The Apex laboratory staff noted broken sample bottles for sample WS-SB-EB-2024522. Staff also noted that MeOH VOAs for erroneously are labeled WS-RS-2-0-1-DUP; the COC reads WS-RS-1-01-DUP. In addition, there was limited sample volume for WS-SB-6-GW-10-15.

Apex laboratory flagged sample WS-SB-6-GW-10-15, with "PRES" indicating incomplete field preservation, additional preservative was added to adjust the pH within the appropriate range for this analysis.

Project and laboratory samples are noted with "C-07," indicating extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.

Holding Times

All samples were analyzed within the holding time.

Retention Time Windows

Not evaluated.

Initial Calibration

Not evaluated.

Initial Calibration Verification

Not evaluated.

Continuing Calibration

Not evaluated.



Method Blank Analysis

No target compounds were detected in the method blank samples.

Laboratory Control Samples

For the laboratory control sample (LCS) and LCS duplicate (LCSD) in batch 24F0105, surrogate analyte, o-Terphenyl, was flagged "Q-41" indicating estimated results. The recovery of Continuing Calibration Verification sample was above upper control limit for this analyte, and results are likely biased high, however the surrogate recoveries were within laboratory limits.

The LCS for batch 24E0999 was flagged "Q-29" for analyte carbazole because the recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.

All other percent recovery values for LCS/LCSDs were within acceptable criteria established by the laboratory for the respective testing methods.

LCD and LCSD batches were flagged with "Q-19" when the blank spike duplicate sample was analyzed in place of matrix spike/duplicate samples due to limited sample amount available for analysis.

Surrogate Compound Recovery

Sample WS-RS-2-2-3 surrogate 4-Bromofluorobenzene was flagged "S-06" meaning surrogate recovery is outside of established control limits.

Sample WS-SB-6-GW-10-15 surrogate o-Terphenyl was flagged "Q-41" indicating estimated results, the recovery of Continuing Calibration Verification sample was above upper control limit for this analyte. Results are likely biased high. The surrogate recoveries were within laboratory limits.

Sample WS-SB-5-GW-10-20 surrogate o-Terphenyl was flagged "Q-41" indicating estimated results, the recovery of Continuing Calibration Verification sample was above upper control limit for this analyte. Results are likely biased high. The surrogate recoveries were within laboratory limits.

Sample WS-SB-EB-20240521 surrogate 2-Fluorobiphenyl was flagged "S-06" meaning surrogate recovery is outside of established control limits.

Sample WS-SB-10-5.0-10.0 surrogate Nitrobenzene-d5 was flagged "Q-41" indicating estimated results, the recovery of Continuing Calibration Verification sample was above upper control limit for this analyte. Results are likely biased high. The surrogate recoveries were within laboratory limits.

Sample WS-RS-1-2-3 surrogate Nitrobenzene-d5 was flagged "Q-41" indicating estimated results, the recovery of Continuing Calibration Verification sample was above upper control limit for this analyte. Results are likely biased high. The surrogate recoveries were within laboratory limits.

Sample WS-RS-2-0-1 surrogate Nitrobenzene-d5 was flagged "Q-41" indicating estimated results, the recovery of Continuing Calibration Verification sample was above upper control limit for this analyte. Results are likely biased high. The surrogate recoveries were within laboratory limits.



Sample WS-RS-2-0-1-DUP surrogates were all flagged “S-05” meaning surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference. The surrogates for this sample were found to be within laboratory recovery limits.

Sample WS-RS-3-0-1 surrogate Nitrobenzene-d5 was flagged “Q-41” indicating estimated results, the recovery of Continuing Calibration Verification sample was above upper control limit for this analyte. Results are likely biased high. The surrogate recoveries were within laboratory limits.

All other percent recovery values for surrogate compounds were within acceptable criteria established by the laboratory for the respective testing methods.

Sample Duplicate Analysis

Batch 24F0117 duplicate sample (24F0117-DUP1) oil hydrocarbons result was detected and flagged “F-03” indicating the result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported. Another flag for this duplicate sample, “Q-05,” indicates analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.

Batch 24E0996 duplicate sample (24E0996-DUP1) analyte chromium result was flagged “Q-04” meaning that spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.

Sample duplicate in batch 24F0030-DUP2 analytes barium, lead, and mercury were all flagged “Q-16” meaning there was reanalysis of an original Batch QC sample.

All other RPDs for sample duplicates were within acceptable criteria established by the laboratory for the respective testing methods.

Blank Spike/Blank Spike Duplicate Sample Analyses

Blank spike and blank spike duplicate sample analyses were not performed for this sample batch.

Matrix Spike/Matrix Spike Duplicate Sample Analyses

The matrix spike sample (24E0996 -MS1) in batch 24E0996, analyte result for barium was flagged “Q-65” by the laboratory indicating spike recovery is estimated due to the high analyte concentration of the source sample.

The matrix spike sample (24F0030 -MS1) in batch 24F0030, analyte result for barium was flagged “E” by the laboratory indicating an estimated value, the result is above the calibration range of the instrument.

All other percent recoveries and calculated RPDs for matrix spikes and matrix spike duplicates were within acceptable criteria established by the laboratory for the respective testing methods.

Trip Blank Sample Analysis

A trip blank sample was not collected for this sample batch.



Equipment Blank Sample Analysis

Equipment blank samples WS-SB-EB-20240521, WS-SB-EB-20240522, and WS-RS-EB-20240522 were collected on May 21, 2024, May 22, 2024, and May 22, 2024 and are associated with the lab report for samples collected on those dates. No target compounds were detected in the equipment blank samples.

Sample WS-SB-EB-20240521 surrogate 2-Fluorobiphenyl was flagged with "S-06" indicating surrogate recovery is outside of established control limits.

Field Replicate Analysis

Samples WS-SB-3-GW-10-20-DUP, WS-SB-1-0.0-3.0-DUP, WS-RS-2-0-1-DUP, WS-IMS-0-0.5-DUP, and WS-IMS-0-0.5-TRP were collected as field replicates of WS-SB-3-GW-10-20, WS-SB-1-0.0-3.0, WS-RS-2-0-1, and WS-IMS-0-0.5, respectively. All RPDs were within the accepted 35% limit for water and 50% limit for soil, except for the following:

- Benz(a)anthracene was detected in WS-RS-2-0-1 and WS-RS-2-0-1-DUP at concentrations of 19.4 and 187 µg/kg dry, respectively. The calculated RPD is 162%.
- Benzo(a) pyrene was detected in WS-RS-2-0-1 and WS-RS-2-0-1-DUP at concentrations of 36.6 and 405 µg/kg dry, respectively. The calculated RPD is 167%.
- Benzo(b)fluoranthene was detected in WS-RS-2-0-1 and WS-RS-2-0-1-DUP at concentrations of 30.4 and 337 µg/kg dry, respectively. The calculated RPD is 167%.
- Benzo(ghi)perylene was detected in WS-RS-2-0-1 and WS-RS-2-0-1-DUP at concentrations of 19.6 and 235 µg/kg dry, respectively. The calculated RPD is 169%.
- Chrysene was detected in WS-RS-2-0-1 and WS-RS-2-0-1-DUP at concentrations of 23.6 and 227 µg/kg dry, respectively. The calculated RPD is 162%.
- Fluoranthene was detected in WS-RS-2-0-1 and WS-RS-2-0-1-DUP at concentrations of 28.8 and 375 µg/kg dry, respectively. The calculated RPD is 171%.
- Phenanthrene was detected in WS-RS-2-0-1 and WS-RS-2-0-1-DUP at concentrations of 17.8 and 155 µg/kg dry, respectively. The calculated RPD is 159%.
- Pyrene was detected in WS-RS-2-0-1 and WS-RS-2-0-1-DUP at concentrations of 42.5 and 476 µg/kg dry, respectively. The calculated RPD is 159%.
- Indeno(123-cd)pyrene was detected in WS-RS-2-0-1-DUP but not detected in WS-RS-2-0-1 above the method detection limit; therefore no RPD could be calculated.

In the analysis of WS-IMS-0-0.5 (primary), WS-IMS-0-0.5-DUP (duplicate), and WS-IMS-0-0.5-TRP (triplicate) samples, all RPDs were within the accepted 50% limit for soil, except for the following:



Analytes	Primary and Duplicate RPD (%)	Primary and Triplicate RPD (%)	Duplicate and Triplicate RPD (%)
1,2,3,6,7,8-HxCDD	Not calculated	Not calculated	17
1,2,3,4,6,7,8-HpCDD	127	67	76
OCDD	148	66	108
2,3,7,8-TCDF	Not calculated	Not calculated	Not calculated
1,2,3,4,6,7,8-HpCDF	76	49	29
OCDF	129	13	121
Total HxCDD	56	92	42
Total HpCDD	136	59	97
Total HxCDF	90	92	3
Total HpCDF	108	38	78

Table Notes:

Red = calculated RPD is above project limits

Not calculated = one or both sample results were not above method detection limits, therefore RPD could not be calculated

Green = calculated RPD is within project limits of 50 % for soil

Reference Material Analysis

No reference material analysis was performed.

Compound Quantitation

The laboratory applied the following flags:

C-07 Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.

Result for the following sample was C-07-flagged:

Sample Name	Analysis
WS-RS-2-2-3	Polychlorinated Biphenyls by EPA 8082A

DCNT Sample decanted due to the presence of sediment. Sample bottle not rinsed with solvent

Results for the following samples were DCNT-flagged:

Sample Name	Analysis
WS-SB-6-GW-10-15	Hydrocarbon Identification Screen by NWTPH-HCID



Sample Name	Analysis
WS-SB-1-GW-5-15	Hydrocarbon Identification Screen by NWTPH-HCID
WS-SB-3-GW-10-20	Hydrocarbon Identification Screen by NWTPH-HCID
WS-SB-5-GW-10-20	Hydrocarbon Identification Screen by NWTPH-HCID

F-03 The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.

Results for the following samples were F-03-flagged:

Sample Name	Analyte
WS-RS-1-0-1	Oil Range Organics
WS-RS-3-0-1	Oil Range Organics
WS-SB-6-GW-10-15	Gasoline Range Organics

F-09 Results in the Gasoline Range are impacted by the overlap of a heavier fuel hydrocarbon product

Result for the following sample was F-09-flagged:

Sample Name	Analyte
WS-SB-5-GW-10-20	Gasoline Range Organics

F-11 The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component.

Result for the following sample was F-11-flagged:

Sample Name	Analyte
WS-SB-5-GW-10-20	Diesel Range Organics

F-12 The result for this hydrocarbon range is primarily due to the presence of individual analyte peaks in the quantitation range. No fuel pattern detected.

Result for the following sample was F-12-flagged:

Sample Name	Analyte
WS-SB-6-GW-10-15	Gasoline Range Organics



F-13 The chromatographic pattern does not resemble the fuel standard used for quantitation.

Result for the following sample was F-13-flagged:

Sample Name	Analyte
WS-SB-6-GW-10-15	Diesel Range Organics

F-17 No fuel pattern detected. The Diesel result represents carbon range C10 to C25, and the Oil result represents >C25 to C40.

Result for the following sample was F-17-flagged:

Sample Name	Analyte
WS-SB-6-GW-10-15	Diesel Range Organics

M-05 Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.

Result for the following sample was M-05-flagged:

Sample Name	Analyte
WS-SB-10-0.0-3.0	Benz(a)anthracene

PRES Incomplete field preservation. Additional preservative was added to adjust the pH within the appropriate range for this analysis.

Result for the following sample was PRES-flagged:

Sample Name	Analysis
WS-SB-6-GW-10-15	Hydrocarbon Identification Screen by NWTPH-HCID, Selected Semivolatile Organic Compounds by EPA 8270E

Q-37 Sample results are less than the Reporting Level (MDL and/or MRL) and Duplicate results exceed this level. See QC Section of the report for Duplicate results. Sample may be non-homogenous, or results may bracket the reporting level.

Result for the following sample was Q-37-flagged:

Sample Name	Analyte
WS-RS-1-0-1	Oil Hydrocarbons



Q-41 Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.

Results for the following samples were Q-41-flagged:

Sample Name	Analyte
WS-RS-1-0-1	o-Terphenyl (surrogate)
WS-SB-6-GW-10-15	o-Terphenyl (surrogate)
WS-SB-5-GW-10-20	o-Terphenyl (surrogate)
WS-SB-10-5.0-10.0	Nitrobenzene-d5 (surrogate)
WS-RS-1-2-3	Nitrobenzene-d5 (surrogate)
WS-RS-2-0-1	Nitrobenzene-d5 (surrogate)
WS-RS-3-0-1	Nitrobenzene-d5 (surrogate)

R-04 Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.

Results for the following samples were R-04-flagged:

Sample Name	Analysis
WS-SB-1-5.0-8.0	Selected Semivolatile Organic Compounds by EPA 8270E
WS-SB-5-5.0-8.5	Selected Semivolatile Organic Compounds by EPA 8270E
WS-SB-10-5.0-10.0	Selected Semivolatile Organic Compounds by EPA 8270E
WS-RS-1-2-3	Selected Semivolatile Organic Compounds by EPA 8270E
WS-RS-2-2-3	Selected Semivolatile Organic Compounds by EPA 8270E
WS-RS-3-0-1	Selected Semivolatile Organic Compounds by EPA 8270E
WS-SB-5-GW-10-20	Selected Semivolatile Organic Compounds by EPA 8270E

S-05 Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

Results for the following samples were S-05-flagged:

Sample Name	Analytes and Analysis
WS-RS-2-0-1-DUP	Surrogates Nitrobenzene-d5, 2-Fluorobiphenyl, Phenol-d6, p-Terphenyl-d14, 2-Fluorophenol, 2,4,6-Tribromophenol
WS-SB-5-5.0-8.5	Selected Semivolatile Organic Compounds by EPA 8270E
WS-SB-10-5.0-10.0	Selected Semivolatile Organic Compounds by EPA 8270E
WS-RS-1-2-3	Selected Semivolatile Organic Compounds by EPA 8270E
WS-RS-2-2-3	Selected Semivolatile Organic Compounds by EPA 8270E
WS-RS-3-0-1	Selected Semivolatile Organic Compounds by EPA 8270E



WS-SB-5-GW-10-20	Selected Semivolatile Organic Compounds by EPA 8270E
------------------	--

S-06 Surrogate recovery is outside of established control limits.

Results for the following samples were S-06-flagged:

Sample Name	Analyte
WS-RS-2-2-3	4-Bromofluorobenzene (surrogate)
WS-SB-EB-20240521	2-Fluorobiphenyl (surrogate)
WS-SB-10-5.0-10.0	Selected Semivolatile Organic Compounds by EPA 8270E
WS-RS-1-2-3	Selected Semivolatile Organic Compounds by EPA 8270E

J Concentration found below the lower quantitation limit but greater than zero.

Results for the following samples were J-flagged:

Sample Name	Analyte
WS-IMS-0-0.5	1234678-HpCDF
WS-IMS-0-0.5-DUP	123678-HxCDD
WS-IMS-0-0.5-TRP	123678-HxCDD

Sample Index

Sample Name	Apex Lab ID	Matrix	Date Collected
WS-SB-6-GW-10-15	A4E1574-01	Water	5/21/2024
WS-SB-1-GW-5-15	A4E1574-02	Water	5/22/2024
WS-SB-3-GW-10-20	A4E1574-03	Water	5/22/2024
WS-SB-3-GW-10-20-DUP	A4E1574-04	Water	5/22/2024
WS-SB-EB-20240521	A4E1574-05	Water	5/21/2024
WS-SB-EB-20240522	A4E1574-06	Water	5/22/2024
WS-RS-EB-20240522	A4E1574-07	Water	5/22/2024
WS-SB-2-0.0-5.0	A4E1574-08	Soil	5/21/2024
WS-SB-2-5.0-7.0	A4E1574-09	Soil	5/21/2024
WS-SB-4-0.0-5.0	A4E1574-10	Soil	5/21/2024
WS-SB-4-5.0-9.0	A4E1574-11	Soil	5/21/2024
WS-SB-1-0.0-3.0	A4E1574-12	Soil	5/22/2024
WS-SB-1-0.0-3.0-DUP	A4E1574-13	Soil	5/22/2024
WS-SB-1-5.0-8.0	A4E1574-14	Soil	5/22/2024
WS-SB-3-0.0-5.0	A4E1574-15	Soil	5/22/2024
WS-SB-3-5.0-8.0	A4E1574-16	Soil	5/22/2024
WS-SB-5-0.0-5.0	A4E1574-17	Soil	5/22/2024
WS-SB-5-5.0-8.5	A4E1574-18	Soil	5/22/2024
WS-SB-10-0.0-3.0	A4E1574-19	Soil	5/22/2024
WS-SB-10-5.0-10.0	A4E1574-20	Soil	5/22/2024
WS-RS-1-0-1	A4E1574-21	Soil	5/22/2024
WS-RS-1-2-3	A4E1574-22	Soil	5/22/2024
WS-RS-2-0-1	A4E1574-23	Soil	5/22/2024
WS-RS-2-0-1-DUP	A4E1574-24	Soil	5/22/2024
WS-RS-2-2-3	A4E1574-25	Soil	5/22/2024
WS-RS-3-0-1	A4E1574-26	Soil	5/22/2024
WS-RS-3-2-3	A4E1574-27	Soil	5/22/2024
WS-IMS-0-0.5	A4E1574-28	Soil	5/22/2024
WS-IMS-0-0.5	A4E1574-29	Soil	5/22/2024
WS-IMS-0-0.5-DUP	A4E1574-30	Soil	5/23/2024
WS-IMS-0-0.5-DUP	A4E1574-31	Soil	5/23/2024
WS-IMS-0-0.5-TRP	A4E1574-32	Soil	5/23/2024
WS-IMS-0-0.5-TRP	A4E1574-33	Soil	5/23/2024
WS-SB-5-GW-10-20	A4E1574-34	Water	5/22/2024

END OF REPORT



Data Validation Report

Project Name: Highway 101 Former Mill Site

Lab Reference Number: A4E1625

Project Number: 0053.009.003	Laboratory: Apex Laboratories
Validated by: Marie Mueller	Matrix: Water
Sampling Date: 5/22/2024	Number of Samples: 2
Data Validation Report Date: 6/21/2024	Analytical Report Date: 6/17/2024

The quality control (QC) elements that were reviewed are listed below.

Data Package Completeness	1	Surrogate Compound Recovery	1
Verification of EDD to Hardcopy Data Package	√	Sample Duplicate Analysis	1
Chain-of-Custody and Sample Preservation	1	Blank Spike/Blank Spike Duplicate Sample Analyses	NA
Holding Times	2	Matrix Spike/Matrix Spike Duplicate Sample Analyses	1
Retention Time Windows	NE	Trip Blank Sample Analysis	NA
Initial Calibration	NE	Equipment Blank Sample Analysis	NA
Initial Calibration Verification	NE	Field Duplicate Sample Analysis	NA
Continuing Calibration	NE	Reference Material Analysis	NE
Method Blank Analysis	√	Compound Quantitation	2
Laboratory Control Samples	1		

√ – Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

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

2 – Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed in this Data Validation Report.

NA – Not applicable

NE – Not evaluated

P – Pending

Overall Assessment

All data, as qualified, are acceptable for use.

Data Package Completeness

The data package was received without a case narrative. The data package included all other required elements: chain-of-custody, sample receipt checklist, results, and QC results.

Verification of EDD to Hardcopy Data Package

Sample results and related quality control data were received in both an electronic and hardcopy format. Electronic data were verified against the laboratory report; no errors were found.

Chain-of-Custody

All sample identification (ID) numbers listed on the chain-of-custody record are consistent with the sample ID reported in the EDD and hardcopy data package.

Sample Preservation

Samples were received intact with cooler temperature of 1.9 degrees Celsius. Proper preservation includes samples chilled to ≤ 6.0 degrees Celsius.

Laboratory staff noted on the cooler receipt form "Sed 3/3 WS-SB-4-GW-15-20 ; 1/3 Sed WS-SB-2-GW-15-20." Laboratory staff also noted that "HCL Ambers pH @ 7 for both samples."

Holding Times

All samples were analyzed within the holding time, except the laboratory flagged "H-01" for sample WS-SB-4-GW-15-20 which was analyzed outside of the recommended holding time for gasoline range organics analysis.

Retention Time Windows

Not evaluated.

Initial Calibration

Not evaluated.

Initial Calibration Verification

Not evaluated.

Continuing Calibration

Not evaluated.

Method Blank Analysis

No target compounds were detected in the method blank samples.

Laboratory Control Samples

For the laboratory control sample (LCS) in batch 24E0999, analyte Carbazole was flagged "Q-29" by the laboratory, indicating recovery for Lab Control Spike (LCS) is above the upper control limit, and data may be biased high.

All other percent recovery values for LCSs were within acceptable criteria established by the laboratory for the respective testing methods.



Surrogate Compound Recovery

Sample WS-SB-2-GW-15-20 surrogate 2-Fluorobiphenyl was flagged “S-06” meaning surrogate recovery is outside of established control limits.

All other percent recovery values for surrogate compounds were within acceptable criteria established by the laboratory for the respective testing methods.

Sample Duplicate Analysis

Batch 24F0030 duplicate sample (24F0030-DUP2) total metals analysis including analytes barium, lead, and mercury were flagged “Q-16” by the laboratory because of reanalysis of an original batch QC sample.

All other RPDs for sample duplicates were within acceptable criteria established by the laboratory for the respective testing methods.

Blank Spike/Blank Spike Duplicate Sample Analyses

Blank spike and blank spike duplicate sample analyses were not performed for this sample batch.

Matrix Spike/Matrix Spike Duplicate Sample Analyses

The matrix spike sample (24F0242-MS1) in batch 24F0242, the sample was flagged “H-01” for BTEX compound analysis by EPA 8260D, meaning that the sample was analyzed outside of the recommended holding time. Also the laboratory flagged this matrix spike sample and analysis with “T-02” indicating this Batch QC sample was analyzed outside of the method specified 12 hour analysis window, results are estimated.

The matrix spike sample (24F0030-MS1) in batch 24F0030, the sample was flagged “E” for the analyte barium, because the result is an estimated value, the result is above the calibration range of the instrument.

All other percent recoveries and calculated RPDs for matrix spikes and matrix spike duplicates were within acceptable criteria established by the laboratory for the respective testing methods.

Trip Blank Sample Analysis

A trip blank sample was not collected for this sample batch.

Equipment Blank Sample Analysis

An equipment blank sample was not collected for this sample batch.



Field Duplicate Analysis

A field duplicate sample was not collected for this sample batch.

Reference Material Analysis

No reference material analysis was performed.

Compound Quantitation

The laboratory applied the following flags:

DCNT Sample decanted due to the presence of sediment. Sample bottle not rinsed with solvent.

Result for the following sample was DCNT-flagged:

Sample Name	Analysis
WS-SB-4-GW-15-20	Hydrocarbon Identification Screen by NWTPH-HCID

H-01 Analyzed outside of the recommended holding time.

Results for the following samples were H-01-flagged:

Sample Name	Analyte
WS-SB-4-GW-15-20	Gasoline Range Organics, BTEX compounds

R-04 Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.

Results for the following samples were R-04-flagged:

Sample Name	Analyte
WS-SB-2-GW-15-20	Barium, Cadmium, Lead, Mercury, Silver

Sample Index

Sample Name	Lab ID	Matrix	Date Collected
WS-SB-2-GW-15-20	A4E1625-01	Water	5/22/2024
WS-SB-4-GW-15-20	A4E1625-02	Water	5/22/2024

END OF REPORT



Appendix G

Water Well Data



STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

RECEIVED
TILL 52845
FEB 08 2019

WELL I.D. LABEL# L 132104
START CARD # 1041511
ORIGINAL LOG #

(1) LAND OWNER Owner Well I.D. **NW** **OWRD**
First Name Dan Last Name Ayers
Company _____
Address P.O. Box 132
City Wheeler State Or Zip 97147

(2) TYPE OF WORK New Well Deepening Conversion
 Alteration (complete 2a & 10) Abandonment (complete 5a)

(2a) PRE-ALTERATION
Casing:

Dia	From	To	Gauge	Stl	Plstc	Wld	Thrd

Material From To Amt sacks/lbs
Seal:

(3) DRILL METHOD Rotary Air Rotary Mud Cable Auger Cable Mud
 Reverse Rotary Other

(4) PROPOSED USE Domestic Irrigation Community
 Industrial/ Commercial Livestock Dewatering
 Thermal Injection Other

(5) BORE HOLE CONSTRUCTION Special Standard (Attach copy)
Depth of Completed Well 142 ft.
BORE HOLE SEAL sacks/lbs

Dia	From	To	Material	From	To	Amt	lbs
10	0	98.5	Bentonite Chips	0	40	25	S
6	98.5	142				Calculated	18
			Cement	40	75	12	S
						Calculated	12

How was seal placed: Method A B C D E
 Other cement tremied
Backfill placed from 75 ft. to 98.5 ft. Material bentonite
Filter pack from ft. to ft. Material Size
Explosives used: Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE
Proposed Amount Pounds Actual Amount Pounds

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6	<input checked="" type="checkbox"/>	1	99	.250	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	4	<input type="checkbox"/>	1	82	sch40	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Shoe Inside Outside Other Location of shoe(s) 99
Temp casing Yes Dia From + To

(7) PERFORATIONS/SCREENS
Perforations Method
Screens Type sch 40 Material pvc

Perf/S	Casing/Screen	Liner	Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size
			4	82	142	.032			

(8) WELL TESTS: Minimum testing time is 1 hour
 Pump Bailer Air Flowing Artesian
Yield gal/min 50 Drawdown Drill stem/Pump depth 142 Duration (hr) 4
Temperature 51 °F Lab analysis Yes By
Water quality concerns? Yes (describe below) TDS amount 105 ppm
From To Description Amount Units

(9) LOCATION OF WELL (legal description) **TILL 52845**
County TILLAMOOK Twp 2 N N/S Range 10 W E/W W/M
Sec 2 NE 1/4 of the SW NW 1/4 Tax Lot 4900
Tax Map Number Lot
Lat " or DMS or DD
Long " or DMS or DD
 Street address of well Nearest address

south of cedar street

(10) STATIC WATER LEVEL

Existing Well / Pre-Alteration	Date	SWL(psi)	+ SWL(ft)
Completed Well	12-18-2018	1	2.3

Flowing Artesian? Dry Hole?

WATER BEARING ZONES Depth water was first found 48

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)
	48	52	.3		
	65	67	3		
12-18-2018	114	118	50	1	<input checked="" type="checkbox"/> 2.3

(11) WELL LOG Ground Elevation

Material	From	To
topsoil	0	2
shale, brown	2	13
claystone, grey/brown, soft	13	18
claystone, grey, med soft	18	28
claystone, grey/white, fractured, hard	28	30
claystone, grey, soft, w/occ siltstone layers	30	65
claystone, white/grey, hard, fractured	65	67
claystone, grey, med hard	67	114
basalt, black, soft fractured	114	122
sandstone, purple, hard	122	124
basalt, black w/quartz fractured	124	142

Set Pump @ 110'
Dickerson Well Drilling, Inc.
(503) 623-2664

Date Started 12-11-2018 Completed 12-18-2018

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
License Number 1574 Date 12-24-2018
Signed

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
License Number 1571 Date 12-24-2018
Signed William A. Blair
Contact Info (optional)

RECEIVED

TILL 1212

3N/10W/35ac

STATE OF OREGON WATER WELL REPORT

APR 29 1994

(as required by ORS 537.765)

WATER RESOURCES DEPT.

(START CARD) # 64112

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

SALEM, OREGON

(1) OWNER: Dave Taplin, Well Number #2, Address 4561 Montrose Circle, Anchorage AK 99515

(2) TYPE OF WORK: [X] New Well, [] Deepening, [] Alteration, [] Abandonment

(3) DRILL METHOD: [X] Rotary Air, [] Rotary Mud, [] Cable, [] Auger, [] Other

(4) PROPOSED USE: [X] Domestic, [] Community, [] Industrial, [] Irrigation, [] Thermal, [] Injection, [] Livestock, [] Other

(5) BORE HOLE CONSTRUCTION: Special Construction approval [] Yes [X] No, Depth of Completed Well 39 ft., Explosives used [] Yes [X] No

Table with columns for HOLE Diameter, From, To, Material, and SEAL From, To, Sacks or pounds. Includes entry for Cement/gel and gravel pack.

How was seal placed: Method [] A [] B [X] C [] D [] E, Backfill placed from 23 ft. to 39 ft., Gravel placed from 23 ft. to 39 ft.

(6) CASING/LINER: Table with columns for Diameter, From, To, Gauge, Steel, Plastic, Welded, Threaded. Includes entry for Casing with 6 inch diameter and 250 gauge.

Final location of shoe(s)

(7) PERFORATIONS/SCREENS: Table with columns for From, To, Slot size, Number, Diameter, Tele/pipe size, Casing, Liner. Includes entry for Perforations with 28 to 36 inch slot size.

(8) WELL TESTS: Minimum testing time is 1 hour. [] Pump, [] Bailer, [X] Air, [] Artesian. Yield gal/min 3, Drawdown, Drill stem at 36, Time 1 hr.

Temperature of water 53°F, Depth Artesian Flow Found, Was a water analysis done? [] Yes By whom, Did any strata contain water not suitable for intended use? [] Too little, [] Salty, [] Muddy, [] Odor, [] Colored, [] Other, Depth of strata:

(9) LOCATION OF WELL by legal description: County TILLAMOOK, Latitude, Longitude, Township 3N, N or S Range 10W, E or W. WM., Section 35, SW 1/4, NE 1/4, Tax Lot 201, Lot, Block, Subdivision, Street Address of Well (or nearest address) OLD MOELLER HWY

(10) STATIC WATER LEVEL: 13 ft. below land surface, Date 04/19/94, Artesian pressure lb. per square inch., Date

(11) WATER BEARING ZONES: Depth at which water was first found 28

Table with columns for From, To, Estimated Flow Rate, SWL. Includes entry for 28 to 35 ft. depth with 3 gpm flow rate.

(12) WELL LOG: Ground Elevation

Table with columns for Material, From, To, SWL. Includes entries for Rock fill/wood, Brown clay, Sticky yellow-brown clay, Sticky lt. gray clay, Med to med.coarse gravel, Firm red-brown clay, Hard & gray claystone.

Date started 04/19/94, Completed 04/19/94

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

(bonded) Water Well Constructor Certification: I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief. WWC Number 1266, Signed, Date 4/24/94

STATE OF OREGON
WATER SUPPLY WELL REPORT

(as required by ORS 537.765)

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

WELL ID. # L 75272

START CARD # 18/808

(1) LAND OWNER

Name Duane Graham Well Number 2
Address P.O. Box 80296
City Portland State Oregon Zip 97280

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

(3) DRILL METHOD:
 Rotary Air Rotary Mud Cable Auger
 Other

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

(5) BORE HOLE CONSTRUCTION:
Special Construction approval Yes No Depth of Completed Well 330 ft.
Explosives used Yes No Type _____ Amount _____

HOLE			SEAL			
Diameter	From	To	Material	From	To	Sacks per pounds
6	0	50	Bentonite	0	50	28
6	50	330	-	-	-	-

How was seal placed: Method A B C D E
 Other Placed in dry + prodded
Backfill placed from _____ ft. to _____ ft. Material _____
Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing: 6	0	137 1/2	12 1/2	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner:					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drive Shoe used Inside Outside None
Final location of shoe(s) 137 1/2

(7) PERFORATIONS/SCREENS:

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>

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

Yield gal/min	Drawdown	Drill stem at	Flowing Time
			1 hr.

Temperature of water _____ Depth Artesian Flow Found _____
Was a water analysis performed? Yes No By whom _____
Did any strata contain water not suitable for intended use? Too little
 Salty Muddy Odor Colored Other _____
Depth of strata: AUG 21 2006

(9) LOCATION OF WELL by legal description:
County Tillamook Latitude _____ Longitude _____
Township 3N N or S Range 10W E or W. WM. _____
Section 35 NW 1/4 NW 1/4
Tax Lot 204 Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) 15015 Old Mohler/Wheeler Rd.

(10) STATIC WATER LEVEL:
N/A ft. below land surface. Date 8-12-06
Artesian pressure _____ lb. per square inch Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found _____

From	To	Estimated Flow Rate	SWL
38	44	1/2	44
300	301	T	---

(12) WELL LOG:

Material	From	To	SWL
Top soil	0	1	
Brown Clay	1	36	
Gray Clay w/ Lg. Gravel	36	44	
Hard Gray Claystone	44	---	
w/ Sm. Gravel embedded	---	330	N/A
No useable water			

Date started 8-10-06 Completed 8-12-06
(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number _____
Signed _____ Date _____

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1221
Signed Andy Cwey Date 8-12-06

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

WELL I.D.#1 69188
START CARD # 155826

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

(1) OWNER: Well Number 1
Name John Esplin
Address 33555 Hwy 53
City Penafem State OR Zip 97131

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

(3) DRILL METHOD:
 Rotary Air Rotary Mud Cable Auger
 Other

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

(5) BORE HOLE CONSTRUCTION:
Special Construction approval Yes No Depth of Completed Well 400 ft.
Explosives used Yes No Type _____ Amount _____

HOLE SEAL

Diameter	From	To	Material	From	To	Sacks or pounds
10	0	37	Cement	0	37	10 sacks
6	37	400				

How was seal placed: Method A B C D E
 Other _____
Backfill placed from _____ ft. to _____ ft. Material _____
Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing: 6	0	39	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Liner: ϕ				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s) none

(7) PERFORATIONS/SCREENS:

From	To	Slot size	Number	Diameter	Material	Casing	Liner
ϕ						<input type="checkbox"/>	<input type="checkbox"/>

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

Yield gal/min	Drawdown	Drill stem at	Flowing	Time
5 gpm	39.5		<input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailer <input type="checkbox"/> Air <input type="checkbox"/> Artesian	1 hr.

Temperature of water 52° Depth Artesian Flow Found _____
Was a water analysis done? Yes By whom _____
Did any strata contain water not suitable for intended use? Too little
 Salty Muddy Odor Colored Other _____
Depth of strata: _____

(9) LOCATION OF WELL by legal description:
County Tillamook Latitude _____ Longitude _____
Township 3N N or S Range 10W B or W. WM.
Section 35 SW 1/4 SW 1/4
Tax Lot _____ Lot 202 Block _____ Subdivision _____
Street Address of Well (or nearest address) 33555 Hwy 53
Penafem, OR 97131

(10) STATIC WATER LEVEL:
_____ ft. below land surface. Date 7/1/03
Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found 150

From	To	Estimated Flow Rate	SWL
150	200	2.5	90

(12) WELL LOG:
Ground Elevation _____

Material	From	To	SWL
Clay - Orange	0	15	
Clay - Tan	15	28	
Sandstone - Blue	28	60	
Basalt w/ Sandstone	60	210	90
Sandstone - Gray	210	280	
Blue Sandstone w/ Basalt layers	280	400	

RECEIVED
RECEIVED
FEB 25 2004
WATER RESOURCES DEPT
SALEM, OREGON

Date started 6/21/03 Completed 7/2/03
(unbonded) Water Well Constructor Certification:

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

WVC Number _____
Signed _____ Date _____

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

WVC Number 1480
Signed A. McV... Date 7/2/03

NOTICE TO WATER WELL CONTRACTOR

The original and first copy of this report are to be filed with the

STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

WATER WELL REPORT

STATE OF OREGON

(Please type or print) (Do not write above this line)

TILL State Well No. 3N/10W-35 ca 382 State Permit No.

(1) OWNER:

Name Gierman (FREDERICK B.) Address P.O. Box 176 NEHALEM-ORE.

(2) TYPE OF WORK (check):

New Well [X] Deepening [] Reconditioning [] Abandon []

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary [X] Driven [] Cable [] Jetted [] Dug [] Bored []

(4) PROPOSED USE (check):

Domestic [X] Industrial [] Municipal [] Irrigation [] Test Well [] Other []

(11) LOCATION OF WELL:

County Tillamook Driller's well number 1/4 Section 35 T. 3N R. 10W W.M.

Bearing and distance from section or subdivision corner

(12) WELL LOG: Diameter of well below casing 6" Depth drilled 135 ft. Depth of completed well 135' ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level as drilling proceeds. Note drilling rates.

Table with columns: MATERIAL, From, To, SWL. Rows include Yellow clay, Blue shale, Blue shale and rock.

Work started Oct. 8 1967 Completed Oct. 8 1967 Date well drilling machine moved off of well Oct. 9 1967

Drilling Machine Operator's Certification:

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

[Signed] Ralph Turner Date Oct 10, 1967 (Drilling Machine Operator)

Drilling Machine Operator's License No. 254

Water Well Contractor's Certification:

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

NAME Ralph Turner Drilling Co. (Person, firm or corporation) (Type or print)

Address Rte. 1 Box 141 Hillsboro, Oreg.

[Signed] Ralph Turner (Water Well Contractor)

Contractor's License No. 247 Date Oct 10, 1967

CASING INSTALLED:

3" Diam. from 0 ft. to 35 ft. Gage 19#

PERFORATIONS:

Perforated? [] Yes [X] No.

Type of perforator used

Size of perforations in. by in. perforations from ft. to ft.

(7) SCREENS:

Well screen installed? [] Yes [X] No

Manufacturer's Name Type Model No. Diam. Slot size Set from ft. to ft.

(8) WATER LEVEL: Completed well.

Static level 80 ft. below land surface Date Oct. 8 Artesian pressure lbs. per square inch Date

(9) WELL TESTS:

Drawdown is amount water level is lowered below static level

Was a pump test made? [] Yes [X] No If yes, by whom? Baller test 6 gal./min. with ft. drawdown after 1 hrs. Artesian flow g.p.m. Date Temperature of water Was a chemical analysis made? [] Yes [X] No

(10) CONSTRUCTION:

Well seal—Material used Cement and sand Depth of seal 35 feet Diameter of well bore to bottom of seal 9" in. Were any loose strata cemented off? [] Yes [X] No Depth Was a drive shoe used? [] Yes [X] No Did any strata contain unusable water? [] Yes [X] No Type of water? depth of strata Method of sealing strata off Was well gravel packed? [] Yes [X] No Size of gravel: Gravel placed from ft. to ft.