FOCUSED PHASE II ENVIRONMENTAL SITE ASSESSMENT

McMinnville Honda Dealership

8515 and 3026 Lone Oak Road N.
McMinnville, Oregon

Prepared for:

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Issued on:

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This

Focused Phase II Environmental Site Assessment

Report for:

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8515 and 3026 Lone Oak Road N.
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Has been prepared for the sole benefit and use of our Client:

Price Ford, Inc.

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Issued October 4, 2019 *by:*

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List of Acronyms and Abbreviations

ASTM	American Society for Testing and Materials
bgs	below ground surface
CFSLs	clean fill screening levels
Client	Price Ford, Inc.
DRO	diesel-range organics
ENW	EVREN Northwest, Inc.
EPA	US Environmental Protection Agency
ESA	environmental site assessment
F&BI	Friedman and Bruya, Inc.
GRO	gasoline-range organics
GPR	ground penetrating radar
HCID	hydrocarbon identification
Kizer	Kizer Excavating, Inc.
LUST	Leaking Underground Storage Tank
µg/L	micrograms per Liter
mg/Kg	milligrams per Kilogram
MRL	method reporting limit
ND	not detected
OAR	Oregon Administrative Rules
ODEQ	Oregon Department of Environmental Quality
PAHs	polynuclear aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PID	photoionization detector
RBCs	risk-based concentrations
RBDM	ODEQ's *Risk-Based Decision Making for the Remediation of Contaminated Sites* guidance document
RRO	residual (oil)-range organics
SLRBCs	screening-level risk-based concentrations
SOW	scope of work
TPH	Total Petroleum Hydrocarbons
UST	underground storage tank
VOCs	volatile organic constituents

1.0 Introduction

EVREN Northwest, Inc. (ENW) has prepared this report presenting the results of a Focused Phase II Environmental Site Assessment (ESA) for the McMinnville Honda Dealership and adjoining residential property located at 8515 and 3026 Lone Oak Road N. in McMinnville, Oregon (see Figures 1 and 2). The subject property is identified by the Yamhill County Assessor's Office on assessor's map number 04S4W11 as tax parcels 1400 and 2200. This Focused Phase II ESA was conducted based on the findings and recommendations of a Phase I ESA recently completed for the subject property.

2.0 Background

ENW completed a Phase I ESA of the subject property in September 2019, in accordance with American Society of Testing and Materials (ASTM) Standard Practice 1527-13. The primary findings of ENW's Phase I ESA were as follows:

- The southern parcel of the subject property (TL2200) has been an automotive dealership since 1980, providing auto sales and service. The dealership building was completely renovated in 2017. The northern parcel (TL1400) was occupied by an abandoned residence.
- The subject property is not served by municipal sanitary or storm water services. A septic system and drain field provide treatment for sanitary wastes. One active domestic well and one irrigation well are also used at the subject property.
- The subject property was listed in the Oregon Department of Environmental Quality's (ODEQ's) Environmental Cleanup Site Inventory (ECSI) database following an anonymous complaint in 1988 of chemicals running into a manmade pond near the southwest corner of the site (former Evaporation Pond). The pond is reported to have received steam cleaning and floor washdown from the service area of the dealership and appeared contaminated during a visit by ODEQ. In February 2002, ODEQ received a letter response from EHS Associates, Inc. on behalf of Capital Honda stating in part the pond was remediated and backfilled by the property owner in 1998-1999. No records of the reported cleanup and backfill activities were identified during ENW's site research.
- A review of ODEQ's Leaking Underground Storage Tank (LUST) database indicated that C&K Petroleum reported a release of hydraulic oil at the site on February 16, 1993. The case was subsequently referred to ODEQ's Site Assessment Division after ODEQ had determine the release was not from an underground storage tank (UST) system. ODEQ requested a completed spill report for the hydraulic oil release but never received a response, nor has ODEQ received any records of cleanup associated with the petroleum release. The location of the oil release is not documented in available records reviewed by ENW.
- In February 1995, Kizer Excavating, Inc. (Kizer) decommissioned by-removal one (1) 300-gallon waste oil UST and one (1) 500-gallon gasoline UST from the subject site. Kizer submitted a report of decommissioning activities to ODEQ, including a site sketch and results of soil samples reportedly collected from the tank excavations. A laboratory report included in Kizer's submittal

shows four soil samples ("West #1," "East #2," "West #3," and "East #4.") were analyzed by Total Petroleum Hydrocarbon Identification (TPH-HCID) method. All of the samples were reported as "ND." Kizer's rough sketch of the former UST locations on the north and south sides of the existing dealership building do not show soil sample locations or sample depths.

Based on the findings of the Phase I ESA, and follow-up discussions with client legal counsel, the following primary environmental concerns were identified:

- ODEQ file information suggests the Evaporation Pond formerly in the southwest portion of the subject property or along the western property boundary may have received hazardous substances in the past. Since cleanup cannot be confirmed, the Evaporation Pond area could still contain impacts and therefore represents an environmental concern. ENW received conflicting accounts of the location of the former Evaporation Pond. Two possible locations are the southwest corner of TL2200 and the current storm water bioswale along the western property boundary.
- Without cleanup confirmation, a reported hydraulic oil release in 1993 raises the concern for petroleum impacts at the site. The location of the release at the site is not clearly stated. Given the type of petroleum product (hydraulic oil), and the reporting party (a petroleum equipment, tank, and hoist supplier), one reasonable conclusion is the release occurred near the former service building where the site's chemical storage areas were located at the time. If a release occurred near the service area, a reasonable area for investigation is immediately down gradient of the service building.
- Given the history of automotive repair operations and use of hazardous chemicals and oils, the absence of sanitary sewer service, and questionable past disposal practices, the former and current septic systems and storm water bioswale each pose a concern for illegal or inadvertent releases of automotive-related chemicals to the subsurface.
- Former waste oil and gasoline USTs decommissioned by removal in 1995 appear to have been assessed; however, reporting by the contractor did not include information on proper sample collection methods or locations. ENW and client believe it is prudent to resample both tank locations to ensure underlying soils are properly assessed prior to purchase.

2.1 Purpose

The purpose of this Focused Phase II ESA was to further investigate, through sampling and laboratory analysis, whether regulated hazardous substances and/or petroleum hydrocarbons are present beneath the subject property. ENW understands this information will be used in support of a purchasing or refinance decision for the subject property.

2.2 Scope of Work

ENW's Scope of Work (SOW) was approved on August 30, 2019. The Focused Phase II ESA SOW included the following tasks:

- Completing a geophysical survey to detect any additional below ground features of environmental concern and to clear areas of proposed subsurface activities of utilities.

- Preparing an appropriate Sampling and Analysis Plan based on results of the geophysical survey and other available information.
- Advancing exploratory soil borings in areas of concern using direct-push methods and collecting soil and reconnaissance ground water samples following accepted industry standards.
- Analyzing discrete soil and reconnaissance ground water samples for the presence of chemical impacts using an Oregon-certified laboratory.
- Evaluating analytical results of soil and reconnaissance ground water samples with respect to Oregon state regulatory standards and ODEQ guidance documents.
- Prepared this report documenting site conditions.

Appendix A presents photos of work conducted on site during this SOW.

3.0 Site Description

Site and Vicinity General Description. The subject property is in a commercial section of McMinnville, Oregon, on the north side of northbound Oregon State Route 99 West, outside city limits. The subject property is comprised of two tax lots encompassing a total of 3.5 acres. The southern tax lot (TL2200) is developed with the McMinnville Honda Dealership, which operates out of a single building. Asphalt driveways and parking areas surround the building on all sides. The northern tax lot (TL 1400) is developed with a vacant residence and detached garage. The site is bordered by a mix of residential, commercial and agricultural land use. Site features and nearby properties are shown on the Site Map on Figure 2.

Geographic Setting. McMinnville is in the Willamette Valley of western Oregon near the base of the Coast Range. The subject site is at an approximate elevation of 154 feet above mean sea level (see Figure 1). Locally, the area slopes gently to the southwest toward the North Yamhill River, located approximately 1,800 feet to the south of the subject site.

Geologic Setting. Geologic mapping of this portion of the Willamette Valley shows the site is located on the main body of fine-grained Missoula Flood deposits (Qff2).[1] The uppermost sediments are interpreted as the fine-grained Willamette Silt of Gannett and Caldwell. The Willamette Silt is described as consisting of stratified silt and clay with minor sand layers that form rhythmic bedding that becomes slightly coarser in grain size with depth. Sediments grade to medium sand with small gravels approximately 50 feet below ground surface (bgs) according to driller's notes in well logs. Underlying sands and gravels are interpreted as fan deposits or coarse-grained deposits of the upper Troutdale Formation.

Soil borings completed at the site generally encountered fine sediments consistent with the Willamette Silt. Engineered fill overlaid the fine-grained sediments in some area. Wet silt and sand layers were reported starting as shallow as 10 feet bgs in most boring logs (see Appendix B for boring logs).

Surface Water and Ground Water. No surface water bodies were observed at the subject site during ENW's recent investigation work. The nearest surface water body is the North Yamhill River, which eventually joins the South Yamhill River to the southeast of the site.

[1] O'Connor J.E. and Others, 2001. Geologic Map of Quaternary Units in the Willamette Valley, Oregon: U.S. Geological Survey Professional Paper 1260, maps (1:250,000).

Well logs for two active wells at the subject property describe the regional (productive) ground water aquifer at a depth of at least 50 feet bgs. Elevated static water levels (reported at 10 feet bgs in onsite wells) suggest the regional aquifer is confined or semi-confined. Shallow perched ground water was encountered in shallow borings at approximately 13 to 20 feet bgs. The shallow perched ground water flow direction was not measured but is presumed to flow generally to the south toward the North Yamhill River.

4.0 Approach

4.1 Objectives

The Focused Phase II ESA objectives were to evaluate for the presence of sub-surface impacts near the known and suspected areas of concern.

Additional objectives for the work were:

- To perform the work efficiently and cost-effectively, minimizing interference with any site operations.
- To perform the work in a safe manner for technical personnel and site employees / visitors.
- To document information and data generated in a professional manner that is valid for the intended use.

4.2 Roles and Responsibilities

ENW was the contracted environmental consultant, who arranged for the following subcontracted services:

- Utility locates and geophysical survey work was performed by Geopotential, Inc. of Boring, Oregon.
- Direct-push drilling equipment and services were provided by Cascade Drilling of Clackamas, Oregon.
- Soil samples were analyzed by Friedman and Bruya, Inc. (F&BI) of Seattle, Washington.

4.3 Preparation Activities

ENW performed or coordinated the following activities prior to conducting site characterization activities:

Plan Preparation. In-house Sampling and Analysis and Health and Safety Plans were prepared for the project.

One Call Notification. Prior to any subsurface site work, a call was placed with One Call Utility Notification Service to identify and locate all public utilities near each of the proposed sampling locations.

Private Utility Locate. In addition to the public utility locate, a private utility locate was conducted by GeoPotential. All boring locations were cleared of public and private underground utilities prior to conducting subsurface exploration.

Planning. ENW scheduled and coordinated with the Client to begin site work.

4.4 Geophysical Survey

A geophysical survey was conducted prior to subsurface sampling on September 6, 2019. Geophysical services were subcontracted to GeoPotential of Clackamas, Oregon to: 1) confirm the location of private utilities not covered by One Call; 2) clear selected boring locations; and, 3) scan the perimeter of all site buildings for buried tanks or other environmental features of concern and assist in placement of additional sampling locations, as necessary.

The survey utilized the following equipment:

Aqua-Tronics Electronic Tracer - electromagnetic sensing equipment designed to identify subsurface anomalies. In the inductive mode, the equipment is used to sense metallic objects in the subsurface. A conductive mode allows for tracing electrical conduit and metallic pipelines.

Magnetometer - used as a complement to the Aqua-Tronics instrument, the magnetometer senses horizontal variations in the local magnetic field caused by buried ferrous metal objects such as USTs, drums, pipes, and debris-filled trenches. (Magnetic surveys can only detect ferrous metal objects. Interference caused by observed surface metal objects limits the accuracy of the survey. The anomalies produced by fences, power lines, cars, and buildings can easily mask an anomaly caused by an underground target.)

Ground Penetrating Radar - GPR uses short impulses of high-frequency radio waves directed into the ground to acquire information about the subsurface. GPR can be used to accurately locate both metallic and non-metallic objects (e.g., USTs, utilities, and drums) from a few inches below the surface to depths of up to 30 feet. GPR may also be effective at delineating trenches and excavations.

4.5 Soil Boring Investigation

A track-mounted GeoProbe rig was used to install eight exploratory borings (B01 through B08) for the purpose of collecting soil and reconnaissance ground water samples for laboratory analysis. ENW directed installation of the soil borings in identified areas of concern based on results of the Phase I ESA and the geophysical survey; boring locations are presented on Figure 3.

Soil borings were completed to between five (5) and 30 feet bgs. Soil materials recovered from the drill rods were inspected continuously for the presence of contamination by visual and olfactory inspection. Soil samples were periodically field screened using a photoionization detector (PID). Soil lithology, field screening results, and other observations were recorded by an ENW geologist onto soil boring logs (presented in Appendix B).

During each sampling interval, select portions of the soil core were retained for possible laboratory analysis. Soils were selected from portions of the soil core where field screening indicated the presence of soil impacts. In the absence of impacts, at least one soil sample was collected from depths most likely to be impacted, based on the feature being investigated. Soil samples were placed directly into laboratory-prepared glass containers, sealed with a Teflon-lined lid, uniquely labeled, and preserved on ice packs in a cooler pending delivery to the laboratory. Duplicate soil samples selected for analysis of volatile organic constituents (VOCs) were additionally collected according to the prescribed methodology and procedures of US Environmental Protection Agency (EPA) sampling method 5035A.

Upon reaching the total depth of select push probe borings, the drill tooling was removed, and a temporary well casing was installed in the open borehole in preparation for ground water sampling.

Approximately two (2) to three (3) gallons of ground water was purged from each boring using a low-flow peristaltic pump and dedicated polyethylene tubing to "purge" the standing water from the borehole and to draw representative ground water into the temporary well. Following purging, reconnaissance ground water samples were collected from clean, dedicated polyethylene tubing connected to a peristaltic pump set at its lowest setting (0.3 to 0.5 liters per minute). The flow rate was minimized to reduce off gassing of volatile contaminants. Samples were transferred into laboratory-supplied containers with appropriate preservative, uniquely labeled, documented on a chain-of-custody record, and placed in a cooler on ice pending transport to the laboratory. Ground water sampling observations were recorded on Field Sampling Data Sheets (FSDS) provided in Appendix C.

Direct-push start cards and well logs were prepared and submitted to Oregon Water Resources Department. On the same day as installation, each boring was backfilled with bentonite "Holeplug" to the approximate ground surface, and the pavement/asphalt surface restored to original condition.

4.6 Laboratory Analysis

Soil and reconnaissance ground water samples were delivered to F&BI of Seattle, Washington under chain-of-custody for analysis according to the analytical plan presented in Table 4-1. Laboratory analytical reports and chain-of-custody documentation are included in Appendix D

Table 4-1. Analytical Plan

Analytical Method	Constituents	Soil	Ground Water
NWTPH-HCID	Total Petroleum Hydrocarbon Identification (HCID) Analysis	All samples	---
NWTPH-Gx	Total Petroleum Hydrocarbons (TPH)–Gasoline-range quantification (GRO)	Select samples	All
NWTPH-Dx	TPH diesel- and residual-range (DRO and RRO) quantification	Select samples	All
EPA 8260C	GRO-related volatile constituents: Benzene Toluene Ethylbenzene Xylenes (total) Naphthalene 1,2-dichloroethane (EDC) 1,2-dibromoethane (EDB) methyl-tert-butyl ether (MTBE) 1,2,4-trimethylbenzene (1,2,4-TMB) 1,3,5-trimethylbenzene (1,3,5-TMB) Isopropylbenzene n-Propylbenzene	Select samples	---
EPA 8260D	VOCs (full list)	---	All
EPA 6020B	Total Lead	Select samples	---
EPA 6020B	Total Lead	Select samples	---
EPA 8270E SIM	Polynuclear aromatic hydrocarbons (PAHs)	---	Select samples
EPA 8081	Polychlorinated biphenyls (PCBs)	---	Select Samples

4.7 Waste Management and Disposal

Investigation-derived waste (soil cuttings and decon/purge water) was placed into Oregon Department of Transportation (ODOT)-approved steel drums pending waste characterization. Laboratory results of samples will be used to determine final waste disposition. Investigation-derived waste should be disposed within 30 days of generation.

4.8 Cleanup Standards and Other Numeric Criteria

When a release has occurred, the assessment and remediation of hazardous substances in Oregon are conducted according to Oregon Administrative Rule (OAR) 340, Division 122, *Hazardous Substance Remedial Action Rules*. Depending on the individual release situation, different pathways to state regulatory closure may be followed.

Analytical results for this Scope of Work were compared to:

- Soil Matrix Cleanup Option (OARs 340-122-0320 through 0360)] cleanup standards which are determined by assigning site-specific values to environmental parameters (e.g., soil type, depth to ground water, etc.). The Soil Matrix Cleanup Score Sheet and Checklist for the site are presented in Appendix E and indicate that Soil Matrix Level 2 cleanup standards are preliminarily determined to apply to the project.
- Screening-level risk-based concentrations (SLRBCs) derived in accordance with the ODEQ's *Risk-Based Decision Making for the Remediation of Contaminated Sites* (RBDM) guidance document.[2]
- Background metal concentrations in soil established by ODEQ.[3] ODEQ does not require cleanup for metals concentrations below default background concentrations.
- Clean fill screening levels (CFSLs) for upland sites established by the ODEQ[4]. ODEQ does not require materials in which contaminant concentrations are less than or equal to CFSLs to be regulated as a solid waste. *CFSLs are used to determine if impacts to soil may require future management[5] and are not used for risk-screening.*

5.0 Site Work Results

This section describes the results of site activities, which included:

- Conducting a geophysical survey to identify buried environmental features of potential concern; and,
- Advancement and sampling of borings (B01 through B08).

The results of laboratory analysis of the soil and reconnaissance water samples from direct push borings B01 through B08 are summarized on Tables 1 and 2, respectively (following the Table Tab after text). Site photographs of field activities are included in Appendix A. Soil boring logs are presented in Appendix B. Copies of the F&BI laboratory reports are included in Appendix C.

5.1 Geophysical Survey

The geophysical survey was completed at the dealership parcel (TL2200) on September 6, 2019, and at the vacant residential parcel (TL1400) on September 20, 2019, as described in Section 4.4.

[2] Applicable to underground storage tanks regulated under the *Cleanup Rules for Leaking Petroleum Underground Storage Tank Systems* (OAR 340-122-0205 through 340-122-0360) and other sources of contamination regulated under the *Hazardous Substance Remedial Action Rules* (OAR 340-122-0010 through 340-122-0115).

[3] ODEQ, March 20, 2013. Fact Sheet: Background Levels of Metals in Soils for Cleanups.

[4] ODEQ, 2014. Clean Fill Determinations: Internal Management Directive, last updated July 23, 2014, by Bill Mason. Clean Fill Table for Uplands last updated by Bill Mason, ODEQ-Eugene, June 10, 2014.

[5] CFSLs do not constitute rulemaking by the Environmental Quality Commission and may not be relied upon to create an enforceable right or benefit, substantive or procedural, enforceable at law or in equity, by any person. Therefore, CFSLs should be considered as general guidance only for best practices during future development of the subject site.

Results of the geophysical survey identified seven (7) magnetic anomalies (MA01 through MA07), which are identified on Figure 3 and briefly interpreted below. Of the seven (7) anomalies detected, five confirmed the presence of features previously identified as areas of concern.

- **MA01 (Former Gasoline UST Excavation – TL2200).** A zone of disturbed soil measuring five (5) to six (6) feet wide by nine and half (9.5) feet long was identified near the south side of the main automotive dealer building. Based on its location and size, the disturbed area is interpreted as the location of one of two USTs decommissioned in 1995.
- **MA02 (Former Evaporation Pond – TL2200).** Disturbed soil was indicated near the west property boundary suggesting the location of the former Evaporation Pond. The anomaly measured approximately 14 feet in diameter, consistent with previously reported dimensions.
- **MA03 (Former Used Oil UST Excavation – TL2200).** A disturbed area measuring seven (7) feet by nine (9) feet was identified on the north side of the dealership building. Based on its location and size, the disturbed area is interpreted as the location of the former used oil UST decommissioned in 1995.
- **MA04 (Former Septic Drain Field – TL2200).** Possible indications of drain piping was identified beneath the asphalt parking lot on the southeast side of the main auto dealership building. Previous site plan sketches identified the former septic drain field in this location.
- **MA05 (Current Septic Drain Field – TL2200).** Several buried drain lines suggestive of the current septic drain field were identified in the southern corner of the south parcel.

The remaining two (2) anomalies did not warrant further investigation based on field interpretation, as described below:

- **MA06 (Former Residential Septic Tank and Piping – TL1400).** What is interpreted as an abandoned domestic septic tank was located between the dilapidated residence and the detached garage. The magnetic signal indicated the buried object to be approximately 10 feet long by seven (7) feet wide. A four-inch ductile metal pipe ran from the object toward the exterior wall of the house. Domestic septic systems are generally not an environmental concern. Therefore, no new borings were sited at this location.
- **MA07 (Well House Piping – TL1400).** Several buried utility lines were identified near the well house next to the residence. Water piping systems are generally not an environmental concern. Therefore, no new borings were sited at this location.

5.2 Soil Boring Locations and General Subsurface Conditions

For the purpose of this investigation, eight (8) borings were completed to a maximum depth of 30 feet bgs and soil and reconnaissance ground water samples were collected as follows:

- Borings B01 and B02 were placed at the west and east ends of the vegetated bioswale located along the west property boundary of TL2200. One soil sample was collected from each boring at a depth of five (5) feet bgs to assess for possible impacts from releases to shallow soils.
- Boring B03 was placed next to the former used oil UST on the north side of the building near the edge of the disturbed zone. One soil sample was collected from first native soils at a depth of

eight (8) feet bgs (beneath the floor of the former UST). One shallow reconnaissance ground water sample was collected to assess potential impacts to ground water.

- Boring B04 was placed just west (down gradient) of the interpreted Evaporation Pond. During drilling, field screening identified a petroleum odor and elevated PID headspace readings in grab samples. One soil sample was collected from a depth of the highest PID reading at the 10-foot depth. One reconnaissance ground water sample was collected from the boring based on the presence of possible soil impacts in overlying soils.
- Boring B05 was sited approximately 10 feet west (presumed down gradient direction) of the service area building. One reconnaissance ground water sample was collected to screen for possible impacts from the service facility.
- Boring B06 was placed next to the former gasoline UST on the south side of the building. Native soil was encountered at approximately eight (8) feet bgs. One soil sample was collected from 12.5 feet bgs across from a wet sandy zone. One shallow reconnaissance ground water sample was collected to assess potential impacts to ground water.
- Boring B07 was placed immediately south of the former septic drain field. One soil sample was collected from native soils at approximately three (3) feet bgs. One reconnaissance ground water sample was collected from the boring.
- Boring B08 was sited next to the current septic drain field. A soil sample was collected from 3.5 feet bgs and one reconnaissance ground water sample was collected.

Table 5-1 (below) summarizes sample locations and sample identifications. Sampling locations are shown on Figure 3.

Table 5-1. Summary of Sampling

Borehole / Location ID	Date Sampled	Soil		Ground Water		Location
		Soil Sample ID	Depth Sampled (feet)	Ground Water Sample ID	Static Water Level (feet bgs)	
B01	9/16/2019	B01/5	5	NS	NS	Storm Water Biosw ale
B02	9/16/2019	B02/5	5	NS	NS	Storm Water Biosw ale
B03	9/16/2019	B03/8	8	B03/GW20	13.52	Former Used Oil UST
B04	9/16/2019	B04/10	10	B04/GW20	14.9	Former Evaporation Pond
B05	9/16/2019	NS	NS	B05/GW20	14.3	Service Area / Former Oil Storage Area
B06	9/16/2019	B06/12.5	12.5	B06/GW20	14.6	Former Gasoline UST
B07	9/16/2019	B07/3	3	B07/GW25	19.9	Former Septic Drain Field
B08	9/16/2019	B08/3.5	3.5	B08/GW30	23.4	Current Septic Drain Field
Notes:						
bgs = below ground surface						
NS = not sampled						

During advancement of the soil borings, ENW staff generally encountered asphalt and gravel base rock within the upper 1-foot of the surface and brown, medium dense, slightly moist silty fine sand, grading to coarsening interbedded silty and sandy layers at approximately 12 feet bgs. Saturated conditions were encountered in six (6) out of the eight (8) borings beginning as shallow as 13 feet bgs. Ground water

occurred within relatively porous sandy interbeds. Static ground water was measured from temporary wells placed in the open boreholes at depths from 13.52 feet to 23.4 feet bgs.

A moderate petroleum odor and elevated PID readings were noted in boring B04 (area interpreted as former Evaporation Pond) beginning at a depth of seven (7) feet and extending to the soil/ground water interface (at approximately 15 feet bgs). A slight petroleum odor was noted at the 12-foot sample interval in boring B05.

5.3 Laboratory Results

5.3.1 Petroleum Hydrocarbons

Petroleum hydrocarbons were generally absent in soil samples collected from borings B01 through B08, with one exception. GRO was detected in boring B04 at the 10-foot sample depth at a concentration of 290 milligrams per Kilogram (mg/Kg).

Laboratory analysis of reconnaissance ground water samples detected the presence of GRO in sample B04/GW20 (area interpreted as former Evaporation Pond) at a concentration of 1,800 micrograms per liter (µg/L). DRO and RRO were also detected in the sample; however, the results were flagged by the laboratory for chromatographic patterns uncharacteristic of DRO and RRO. In some instances, detections of DRO and RRO can indicate the presence of a weathered gasoline rather than a diesel- or oil-range product. DRO was also detected in sample B05/GW20 down gradient of the service area (flagged concentration of 500 µg/L) and B07 near the former septic drain field (flagged concentration of 53 µg/L).

5.3.2 Volatile Organic Constituents

Further analysis by EPA 8260 for GRO-related VOCs in soil was requested for sample from B04/10 containing GRO; laboratory analysis reported detections of ethylbenzene, iso-propylbenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and xylenes.

All six (6) reconnaissance ground water samples were also analyzed for the full list of VOCs. Only sample B04/GW20 was reported with VOC detections: benzene (5.0 µg/L), cis-1,2-dichloroethene (1.5 µg/L), ethylbenzene (87 µg/L), naphthalene (3.8 µg/L), iso-propylbenzene (2.7 µg/L), 1,2,4-trimethylbenzene (30 µg/L), 1,3,5-trimethylbenzene (5.8 µg/L) and xylenes (380 µg/L) were reported. None of the full list VOCs were detected in the remaining ground water samples analyzed.

5.3.3 Polycyclic Aromatic Hydrocarbons and Polychlorinated Biphenyls

Since PAHs are commonly associated with DRO and PCBs can be associated with RRO, further analysis for PAHs and PCBs was performed on samples containing the highest DRO and RRO concentrations. Of the two reconnaissance ground water samples analyzed for PAHs, only fluorene (0.096 µg/L) was detected in the ground water sample from the area interpreted as the former Evaporation Pond (B04/GW20). PCBs were not detected above the laboratory method reporting limit (MRL).

5.3.4 Metals

Since some older gasoline formulations prior to the 1970s contained lead additives, the GRO detection in soil sample B04/10 was further characterized by analyzing for total lead by EPA Method 6020. Laboratory results detected total lead below ODEQ's Regional Default Background Concentration for lead in soil for

the South Willamette Valley Province. Due to transcription error on the chain-of-custody, ground water samples were not analyzed for lead.

6.0 Preliminary Screening for Risk Drivers

To better understand potential risk drivers and environmental liabilities, a preliminary risk screening was conducted using the results (data) of this Focused Phase II ESA.

Tables 1 and 2 identified the following constituents as exceeding their respective SLRBCs in soil or reconnaissance ground water:

- GRO and ethylbenzene in soil
- GRO, DRO, RRO, benzene, ethylbenzene, naphthalene, and xylenes in shallow reconnaissance ground water

SLRBCs are ODEQ's most-stringent default risk-based cleanup levels presented in their risk-based decision making (RBDM) guidance document as *Appendix A - Table of Risk-Based Concentrations*. A full risk assessment would identify site-specific receptors (and consequent exposure pathways) and compare detected concentrations to ODEQ risk-based concentrations (RBCs) for each. As a preliminary approach, ENW identified potential receptors based on current land use and zoning at the subject property (*Very Low Density Residential [VLRD-2.5]),* specifically*:* residential, occupational, construction, and excavation worker.

Please Note: The source and extent of identified soil and ground water impacts is currently unknown. Therefore, this screening may not accurately identify all potential risk drivers or environmental liabilities at the site. Further delineation of impacts and a risk assessment would have to be completed to fully characterize site impacts and potential human health and ecological risks.

Further Evaluation of Contaminants in Soil. Table 3 further evaluates impact in soil against the default RBCs for four (4) soil exposure pathways presented in ODEQ's RBDM guidance document (*Soil Ingestions, Inhalation and Dermal Contact*; *Vapor Intrusion into Buildings*; *Volatilization to Outdoor Air*; and, *Leaching to Groundwater*). The following RBCs for soil exposure pathways were exceeded:

- ***Leachate of Soil Contaminants to Groundwater.*** Impact to ground water from soil contamination generally occurs indirectly as a result of contaminants leaching from a primary contaminant source. Dissolved ground water contaminants may in turn be ingested directly or volatilized to indoor and/or outdoor air. Factors affecting the leaching potential of soil include annual precipitation rate, soil porosity and other physical and chemical conditions. This pathway should be considered whenever vadose zone contamination is found overlying an aquifer that is currently used or is reasonably likely to be used for drinking water. The presence of a well onsite suggests ground water is being used for domestic purposes; therefore, this pathway is likely complete.
- ***Volatilization of Soil Contaminants to Indoor Air.*** In this exposure scenario, inhalation of hazardous compounds may occur if residual soil contaminants volatilize and migrate as vapor-phase contaminants into existing or future structures, such as through permeable portions of the foundation (i.e., cracks, expansion joints, utility hookups, etc.). In accordance with ODEQ guidance, this pathway should be considered whenever vadose zone soil contaminated with VOCs are located beneath or within 10 feet of a commercial building and within 50 feet of a residential

building. Although GRO exceeds the RBC for this exposure pathway, the soil impacts are over 75 feet from the onsite structure and current use of the property is commercial, not residential. Therefore, this pathway may not be complete under current exposure pathway; however, future likely land uses also need to be evaluated.

Further Evaluation of Contaminants in Ground Water. Table 4 screens the highest constituent detections in ground water against RBCs developed for the four (4) ground water exposure pathways acknowledged by ODEQ (*Ingestion and Inhalation from Tap Water, Vapor Intrusion into Buildings, Volatilization to Outdoor Air, and Groundwater in an Excavation*). One or more ground water constituents exceeded the following RBCs:

- **Ingestion of and Inhalation from Tap Water.** Current ground water data indicates p*otential risk to residential and occupational workers by this exposure pathway.*

7.0 Conclusions and Recommended Next Actions

The Focused Phase II ESA has identified residual petroleum-impacted soil and ground water in the area of the former Evaporation Pond (interpreted) in the southwest corner of TL2200 (southern parcel). Ground water impacts were also observed immediately west of the service area and beneath the former septic drain field in the southern part of TL2200. No contamination was observed at the bioswale area or beneath two formerly decommissioned USTs.

Based on evaluation of laboratory results and field observations, the following conclusions may be made:

- GRO in soil in the vicinity of the former Evaporation Pond exceeds its SLRBC for soil. It was determined that the *Leaching to Groundwater* exposure pathway may be complete.
- Petroleum hydrocarbons and several related volatile organic constituents are present in the shallow ground water near the former Evaporation Pond above SLRBCs. It is unclear at this time if these impacts extend to the deeper regional aquifer from which the on-site well derives its water. These constituents pose a potential human health risk to users of the well, if impacted, as well as other ground-water users in the area, if impacts are laterally extensive.

Based on the results of this investigation, ENW recommends the following:

- The nature and extent of contamination near the former Evaporation Pond should be investigated prior to purchasing the property.
- Future use of ground water should be prohibited pending further evaluation of the source and extent of ground water impacts.

We recommend this report is kept as part of the permanent property records.

8.0 Limitations

The scope of this report is limited to observations made during on-site work; interviews with knowledgeable sources; and review of readily available published and unpublished reports and literature.

As a result, these conclusions are based on information supplied by others as well as interpretations by qualified parties.

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

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

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

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

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

Tables

Table 1 - Summary of Analytical Data, Soil

Location ID		B01	B02	B03	B04	B06	B07	B08	Maximum Soil Concentration (remaining soil)	Soil Matrix Cleanup Level	ODEQs Screening-Level Risk-Based Concentrations SLRBCs[1] (Soil)	Background Concentrations (Regional Default)	Clean Fill Screening Levels or Background Concentrations (as applicable)	Exceeds ODEQs Screening-Level SLRBCs (Soil) and/or Soil Matrix Cleanup Level
Sample ID		B01/5	B02/5	B03/8	B04/10	B06/12.5	B07/3	B08/3.5						
Date Sampled		9/16/2019	9/16/2019	9/16/2019	9/16/2019	9/16/2019	9/16/2019	9/16/2019						
Depth Sampled (feet)		5	5	8	10	12.5	3	3.5						
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW						
Location		Swale and Possible Former Fuel Island	Swale and Possible Former Fuel Island	Former Waste Oil UST	Former Evaporation Pond	Former UST Areas	Former Drain Field	Current Drain Field				South Willamette Valley		TRUE OR Y FALSE OR N
Constituent of Interest	Note	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/Kg (ppm)					
Benzene	c, v	---	---	---	<0.03 (ND)	---	---	---	<0.03 (ND)	NE	0.023	---	0.0093	(Y)
EDB (1,2-dibromoethane)	c, v	---	---	---	<0.05 (ND)	---	---	---	<0.05 (ND)	NE	0.00012	---	0.00081	(Y)
EDC (1,2-dichloroethane)	c, v	---	---	---	<0.05 (ND)	---	---	---	<0.05 (ND)	NE	0.0028	---	0.0014	(Y)
Ethylbenzene	c, v	---	---	---	**0.34**	---	---	---	0.34	NE	0.22	---	0.16	Y
MTBE (methyl t-butyl ether)	c, v	---	---	---	<0.05 (ND)	---	---	---	<0.05 (ND)	NE	0.11	---	0.092	N
Naphthalene	c, v	---	---	---	<0.05 (ND)	---	---	---	<0.05 (ND)	NE	0.077	---	0.087	N
iso-Propylbenzene (cumene)	nc, v	---	---	---	0.071	---	---	---	0.071	NE	96	---	85.2	N
Toluene	nc, v	---	---	---	<0.05 (ND)	---	---	---	<0.05 (ND)	NE	83	---	200	N
1,2,4-Trimethylbenzene	nc, v	---	---	---	1.1	---	---	---	1.1	NE	10	---	16	N
1,3,5-Trimethylbenzene	nc, v	---	---	---	0.50	---	---	---	0.5	NE	11	---	92	N
Xylenes	nc, v	---	---	---	2.12	---	---	---	2.12	NE	23	---	25	N
Metals														
Lead	NA, nv	---	---	---	8.30	---	---	---	8.30	NE	30	28	28	N
Total Petroleum Hydrocarbons														
Generic Gasoline (GRO)	nc, v	<20 (NP)	<20 (NP)	<20 (NP)	**290**	<20 (NP)	<20 (NP)	<20 (NP)	**290**	80	31	---	---	Y
Generic Diesel / Heating Oil (DRO)	nc, v	<50 (NP)	<50 (NP)	<50 (NP)	<50 (ND)	<50 (NP)	<50 (NP)	<50 (NP)	<50 (ND)	500	1100	---	---	N
Generic Mineral Insulating Oil (RRO)	nc, nv	<250 (NP)	<250 (NP)	<250 (NP)	<250 (ND)	<250 (NP)	<250 (NP)	<250 (NP)	<250 (ND)		2800	---	---	N

Notes:
mg/Kg = milligram per kilogram or parts per million (ppm).
<# (ND) = not detected at or above the laboratory method reporting limit shown.
NE = not established.
NP = not present at or above the laboratory method reporting limit shown (HCID analysis).
— = not analyzed or not applicable.
c = carcinogenic
nc = noncarcinogenic
v = volatile
nv = nonvolatile
GRO = gasoline-range organics.
DRO = diesel-range organics.
RRO = residual-range organics.
Shaded concentrations exceed screening level risk-based concentrations and background concentrations, as applicable.

[1] Lowest Risk-Based Concentration for soil (screening level assumes residential use, from ODEQ RBCs dated May 2018).

(Y) indicates analyte not detected, but detection limit is above screening concentration.

Table 2 - Summary of Analytical Data, Reconnaissance Ground Water

Location ID		B03	B04	B05	B06	B07	B08	Maximum Ground Water Concentration	ODEQs Screening-level Risk-Based Concentrations (SLRBCs) [1]	Background Concentrations (metals)	Exceeds Background Concentrations (metals)?	COPC?
Sample ID		B03/GW20	B04/GW20	B05/GW20	B06/GW20	B07/GW25	B08/GW30					
Date Sampled		9/16/19	9/16/19	9/16/19	9/16/19	9/16/19	9/16/19					
Depth Sampled (feet)		20	20	20	20	25	30					
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW					
Location		Former Waste Oil UST	Former Evaporation Pond	Down gradient of service area	Former UST area	Former Drain Field	Current Drain Field				TRUE OR Y FALSE OR N	TRUE OR Y FALSE OR N
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)				
Volatile Organic Constituents												
Benzene	c, v	<0.35 (ND)	**0.50**	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	**0.5**	0.46	NE	N	Y
Bromodichloromethane	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	0.13	NE	N	(Y)
Bromoform	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	3.3	NE	N	N
Bromomethane	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	7.5	NE	N	N
Carbon tetrachloride	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	0.46	NE	N	(Y)
Chlorobenzene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	77	NE	N	N
Chlorodibromomethane (dibromochloromethane	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	0.17	NE	N	(Y)
Chloroethane (ethyl chloride)	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	21000	NE	N	N
Chloroform	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	0.22	NE	N	(Y)
Chloromethane	nc, v	<10 (ND)	<10 (ND)	<10 (ND)	<10 (ND)	<10 (ND)	<10 (ND)	<10 (ND)	190	NE	N	N
1,2-Dichlorobenzene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	300	NE	N	N
1,4-Dichlorobenzene	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	0.48	NE	N	(Y)
1,1-Dichloroethane	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	2.8	NE	N	N
1,1-Dichloroethene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	280	NE	N	N
cis-1,2-Dichloroethene	nc, v	<1 (ND)	1.5	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	1.5	36	NE	N	N
trans-1,2-Dichloroethene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	360	NE	N	N
Dichloromethane	c, v	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	11	NE	N	N
EDB (1,2-dibromoethane)	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	0.0075	NE	N	(Y)
EDC (1,2-dichloroethane)	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	0.17	NE	N	(Y)
Ethylbenzene	c, v	<1 (ND)	**87**	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	**87**	1.5	NE	N	Y
MTBE (methyl t-butyl ether)	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	14	NE	N	N
Naphthalene	c, v	<1 (ND)	**3.8**	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	**3.8**	0.17	NE	N	Y
iso-Propylbenzene (cumene)	nc, v	<1 (ND)	2.7	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	2.7	440	NE	N	N
Tetrachloroethene (PCE)	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	12	NE	N	N
Toluene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	1100	NE	N	N
1,1,1-Trichloroethane	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	8000	NE	N	N
1,1,2-Trichloroethane	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	0.28	NE	N	(Y)
Trichloroethene	NA, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	0.49	NE	N	(Y)
Trichlorofluoromethane (Freon 11)	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	1100	NE	N	N
1,2,4-Trimethylbenzene	nc, v	<1 (ND)	30	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	30	54	NE	N	N
1,3,5-Trimethylbenzene	nc, v	<1 (ND)	5.8	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	5.8	59	NE	N	N
Vinyl chloride	c, v	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	0.027	NE	N	(Y)
Xylenes	nc, v	<3 (ND)	**380**	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	**380**	190	NE	N	Y

Table 2 - Summary of Analytical Data, Reconnaissance Ground Water

Location ID		B03	B04	B05	B06	B07	B08	Maximum Ground Water Concentration	ODEQs Screening-level Risk-Based Concentrations (SLRBCs) [1]	Background Concentrations (metals)	Exceeds Background Concentrations (metals)?	COPC?
Sample ID		B03/GW20	B04/GW20	B05/GW20	B06/GW20	B07/GW25	B08/GW30					
Date Sampled		9/16/19	9/16/19	9/16/19	9/16/19	9/16/19	9/16/19					
Depth Sampled (feet)		20	20	20	20	25	30					
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW					
Location		Former Waste Oil UST	Former Evaporation Pond	Down gradient of service area	Former UST area	Former Drain Field	Current Drain Field				TRUE OR Y FALSE OR N	TRUE OR Y FALSE OR N
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)				
Semivolatile Organic Constituents												
Polychlorinated biphenyls (Total PCBs)	c, v	---	<0.1 (ND)	---	---	---	---	<0.1 (ND)	0.006	NE	N	(Y)
Polycyclic Aromatic Hydrocarbons												
Acenaphthene	nc, v	---	<0.02 (ND)	<0.02 (ND)	---	---	---	<0.02 (ND)	510	NE	N	N
Anthracene	nc, v	---	<0.02 (ND)	<0.02 (ND)	---	---	---	<0.02 (ND)	>S	NE	N	N
Benz[a]anthracene	c, v	---	<0.02 (ND)	<0.02 (ND)	---	---	---	<0.02 (ND)	0.03	NE	N	N
Benzo[a]pyrene (BaP equivalents)	c, nv	---	<0.02 (ND)	<0.02 (ND)	---	---	---	<0.02 (ND)	0.025	NE	N	N
Benzo[b]fluoranthene	c, nv	---	<0.02 (ND)	<0.02 (ND)	---	---	---	<0.02 (ND)	0.25	NE	N	N
Benzo[k]fluoranthene	c, nv	---	<0.02 (ND)	<0.02 (ND)	---	---	---	<0.02 (ND)	2.5	NE	N	N
Chrysene	c, nv	---	<0.02 (ND)	<0.02 (ND)	---	---	---	<0.02 (ND)	>S	NE	N	N
Dibenz[a,h]anthracene	c, nv	---	<0.02 (ND)	<0.02 (ND)	---	---	---	<0.02 (ND)	0.025	NE	N	N
Fluoranthene	nc, nv	---	<0.02 (ND)	<0.02 (ND)	---	---	---	<0.02 (ND)	>S	NE	N	N
Fluorene	nc, v	---	0.096	<0.02 (ND)	---	---	---	0.096	280	NE	N	N
Indeno[1,2,3-cd]pyrene	c, nv	---	<0.02 (ND)	<0.02 (ND)	---	---	---	<0.02 (ND)	>S	NE	N	N
Pyrene	nc, v	---	<0.02 (ND)	<0.02 (ND)	---	---	---	<0.02 (ND)	>S	NE	N	N
Total Petroleum Hydrocarbons												
Generic Gasoline (GRO)	nc, v	<100 (ND)	**1800**	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	**1800**	110	NE	N	Y
Generic Diesel / Heating Oil (DRO)	nc, v	<50 (ND)	**1700 x**	**500 x**	<50 (ND)	53 x	<50 (ND)	**1700**	100	NE	N	Y
Generic Mineral Insulating Oil (RRO)	nc, nv	<250 (ND)	**400 x**	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	**400**	300	NE	N	Y

Notes:

ug/L = micrograms per Liter or parts per billion (ppb).

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

NE = not established.

[1] Lowest Risk-Based Concentration for ground water (screening level assumes residential use, from ODEQ RBCs dated May 2018).

— = not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

GRO = gasoline-range organics.

DRO = diesel-range organics.

RRO = residual-range organics.

Bolded concentrations exceed screening level risk-based concentrations and background concentrations, as applicable.

(Y) indicates analyte not detected, but detection limit is above screening concentration.

x = the pattern of peaks is not indicative of the fuel standard used for quantitation.

Table 3. Further Evaluation for Risk Drivers in Soil

Contaminated Medium		SOIL mg/Kg (ppm)																								Maximum Detected Concentration
Exposure Pathway		Soil Ingestion, Dermal Contact, and Inhalation RBC_{ss}										Volatilization to Outdoor Air RBC_{so}						Vapor Intrusion into Buildings RBC_{si}						Leaching to Groundwater RBC_{sw}						
Receptor Scenario		Residential		Urban Residential		Occupational		Construction Worker		Excavation Worker		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		
Direct or Indirect Pathway (see notes)		DC		DC		DC		DC		DC		IVS		IVS		IVS		IVS		IVS		IVS		IS		IS		IS		
Contaminant of Concern	Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note	mg/Kg (ppm)
Volatile Organic Constituents																														
Ethylbenzene	c, v	34		110		150		1700	>Csat	49000	>Csat	36		85		160		1.3		3		17		0.22		0.94		0.9		0.34
Total Petroleum Hydrocarbons																														
Generic Gasoline (GRO)	nc, v	1200		2500		20000		9700		-	>Max	5900		5900		69000		**94**		**94**		-	>Max	**31**		**31**		**130**		290

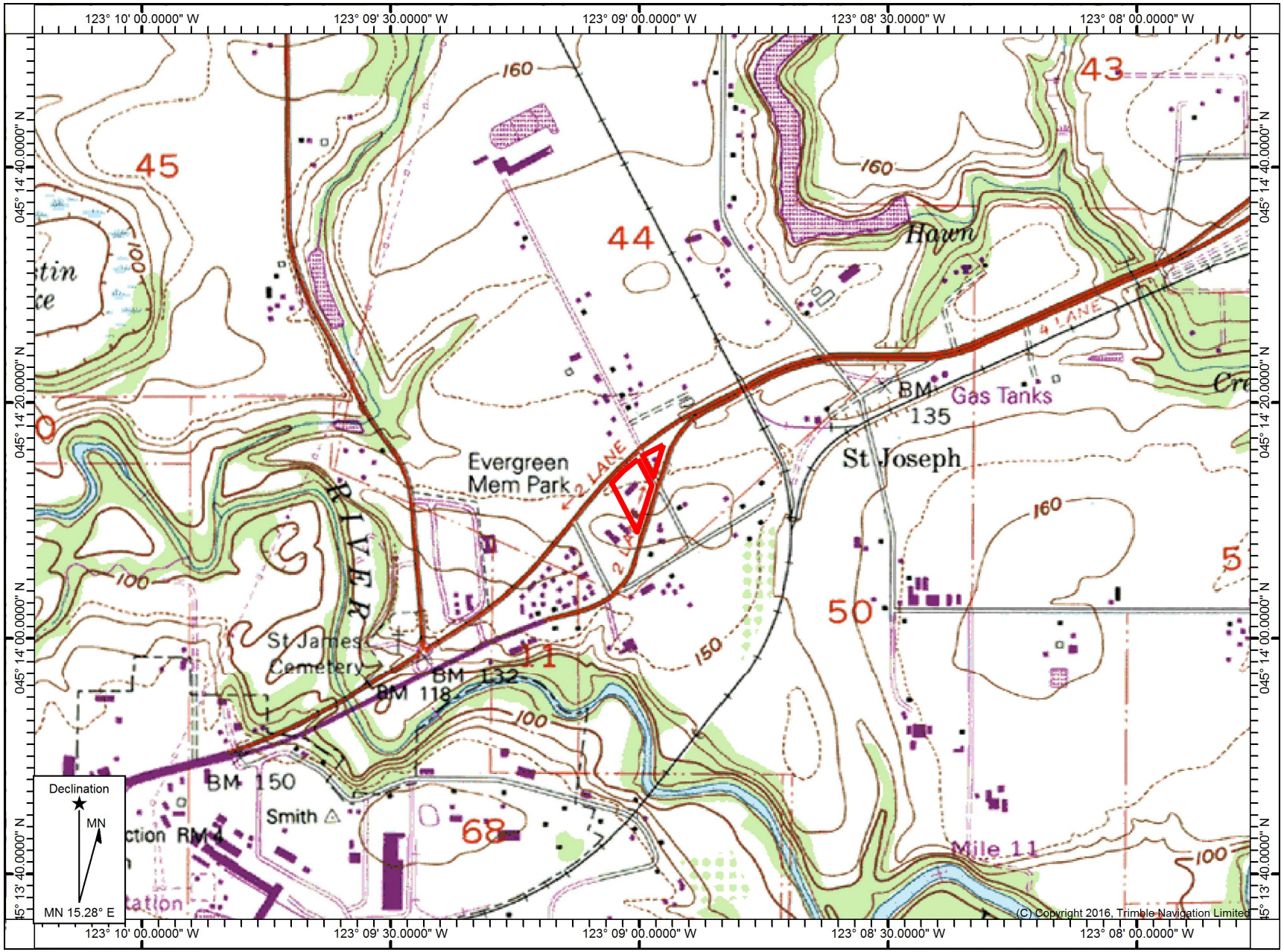
Notes:
— = not analyzed or not applicable.
mg/Kg = milligrams per Kilogram or parts per million
Bolded/Shaded concentrations and shaded cells indicate result exceeds the RBC.
nc = noncarcinogenic
v = volatile
GRO = gasoline-range organics.
<Max = The constituent RBC for this pathway is greater than 100,000 mg/kg. The Department believes it is highly unlikely that such concentrations will ever be encountered.

Table 4. Further Evaluation for Risk Drivers in Reconnaissance Ground Water

Contaminated Medium		GROUND WATER µg/L (ppb)																				Maximum Detected Concentration
Exposure Pathway		Ingestion & Inhalation from Tapwater RBC_{tw}						Volatilization to Outdoor Air RBC_{wo}						Vapor Intrusion into Buildings RBC_{wi}						GW in Excavation RBC_{we}		
Receptor Scenario		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Construction & Excavation Worker		
Direct or Indirect Pathway (see notes)		DS		DS		DS		IVW		IVW		IVW		IVW		IVW		IVW		DS		
Contaminant of Concern	Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note	µg/L (ppb)
Volatile Organic Constituents																						
Benzene	c, v	**0.46**		2		2.1		3100		7400		14000		210		510		2800		1800		0.5
Ethylbenzene	c, v	**1.5**		**6.7**		**6.4**		9900		23000		43000		620		1500		8200		4500		87
Naphthalene	c, v	**0.17**		**0.78**		**0.72**		3600		8500		16000		840		2000		11000		500		3.8
Xylenes	nc, v	**190**		710		830		1200000	>S	1200000	>S	5100000	>S	86000		86000		1100000	>S	23000		380
Total Petroleum Hydrocarbons																						
Generic Gasoline (GRO)	nc, v	**110**		**110**		**450**		-	>S	-	>S	-	>S	22000		22000		-	>S	14000		1800
Generic Diesel / Heating Oil (DRO)	nc, v	**100**		**100**		**430**		-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	1700
Generic Mineral Insulating Oil (RRO)	nc, nv	**300**		**300**		1300		-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	400

Notes:
ND = not detected at or above laboratory method reporting limits
— = not analyzed or not applicable.
< = not detected above method reporting limit shown.
NE = not established.
ug/L = micrograms per Liter or parts per billion (ppb).
c = carcinogenic
nc = noncarcinogenic
v = volatile
nv = nonvolatile
GRO = gasoline-range organics.
DRO = diesel-range organics.
RRO = residual-range organics.
Bolded/Shaded concentrations exceed screening level risk-base
<S = This groundwater RBC exceeds the solubility limit.

Figures



Name: MC MINNVILLE
Date: Jan 1, 1992

0 1000 2000
Feet

Location: 045° 14' 13.7589" N, 123° 08' 59.6608" W
Contour Interval: 20 ft

EVREN NORTHWEST INC environmental, natural resource consultants	Date Drawn: 7/10/2019 CAD File Name: 1375-19001-fig1sv_map(v01) Drawn By: JOB Approved By: LDG	McMinnville Honda Dealership 8515 & 3026 Lone Oak Road N McMinnville, Oregon	**Site Vicinity Map**	Project No. 1375-19001 Figure No. **1**

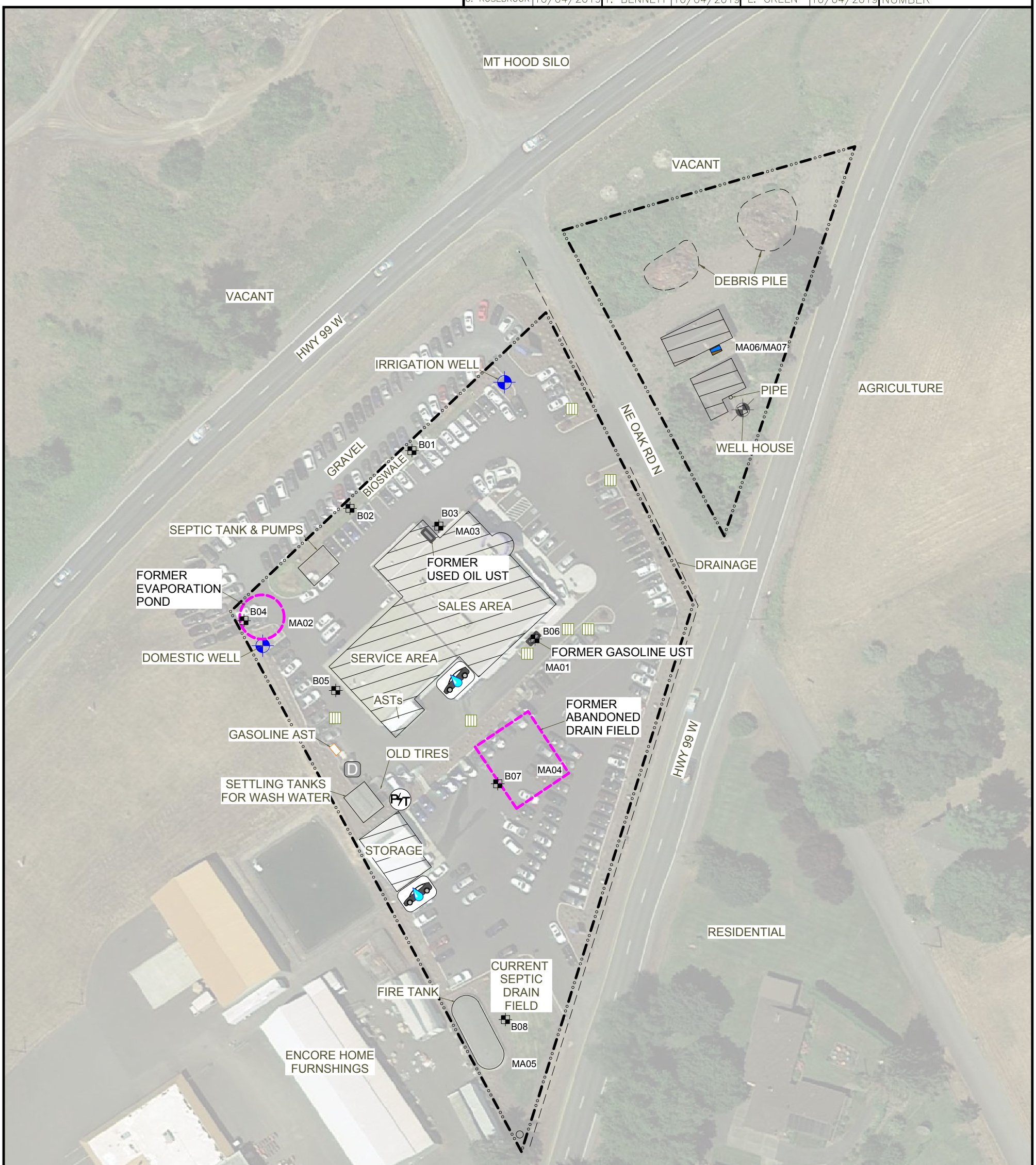
Name: Satellite Image
Date: Unknown

0 100 200 300 400 500
Feet

Location: 045° 14' 13.1057" N, 123° 08' 59.3516" W

EVREN NORTHWEST INC environmental, natural resource consultants	Date Drawn: 7/10/2019 CAD File Name: 1375-19001-fig2aerial(v01) Drawn By: JOB Approved By: LDG	McMinnville Honda Dealership 8515 & 3026 Lone Oak Road N McMinnville, Oregon	**Aerial Photo Map**	Project No. 1375-19001 Figure No. **2**

DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
C. ROSEBROOK	10/04/2019	T. BENNETT	10/04/2019	L. GREEN	10/04/2019	1375-19001(v01)



LEGEND:

- SUBJECT BUILDINGS
- SUBJECT PROPERTY BOUNDARIES
- CATCH BASIN
- POLE TRANSFORMER
- WELL
- DECOMMISSIONED WELL
- CAR WASH STATION
- B01 — ENW ASSESSMENT BORING SAMPLE LOCATION
- UST — UNDERGROUND STORAGE TANK
- AST — ABOVE GROUND STORAGE TANK
- MA01 — MAGNETIC ANOMALY IDENTIFIED DURING THE GEOPHYSICAL SURVEY
- D — DUMPSTERS
- SEPTIC TANK
- FORMER UST
- AST

APPROXIMATE SCALE

0 75 150 FEET

N

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NOTES:

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

FIGURE 3

SAMPLE LOCATION DIAGRAM

MCMINNVILLE HONDA DEALERSHIP
8515 & 3026 LONE OAK ROAD
MCMINNVILLE, OREGON

Appendix A

Site Photographs

Scanning TL2200 using Ground Penetrating Radar equipment.

View of magnetic anomaly MA01, interpreted to be the excavation of a reported former gasoline UST.

View of magnetic anomaly MA03, interpreted as a former used oil UST area.

View of magnetic anomaly MA02. Disturbed soils were indicated beneath this area, interpreted to be part of the former Evaporation Pond.

EVREN NORTHWEST INC. environmental / natural resource consultants	McMinnville Honda Dealership 8515 & 3026 Lone Oak Road N McMinnville, Oregon	**Site Photographs**	Project No. 1375-19001-02 Appendix **A**

View of the current drain field for the on-site septic system.

Drilling boring B01 at the storm water bioswale near the western property boundary of TL2200.

Soil cores retrieved from the drill string were inspected and field screened continuously from the surface to the total depth of each boring.

Drilling near the former Evaporation Pond (boring B04).

EVREN NORTHWEST INC. environmental / natural resource consultants	McMinnville Honda Dealership 8515 & 3026 Lone Oak Road N McMinnville, Oregon	**Site Photographs**	Project No. 1375-19001-02 Appendix **A**

Ground water samples were collected from select borings using a peristaltic pump and dedicated tubing placed in a temporary well casing. Each well was purged prior to sampling.

Drilling equipment was steam cleaned between borings to prevent cross-contamination.

Appendix B

Soil Boring Logs

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DRILL LOG

PROJECT: McMinnville Honda Dealership			PROJECT NO.: 1375-19001-02	BORING NO.: B01
SITE: 8515 NE Lone Oak Road, McMinnville, Oregon	BEGUN: 9/16/19	COMPLETED: 9/16/19	HOLE SIZE: 2 inches	ANGLE FROM HORIZ.: 90
COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER / GROUND ELEVATION
DRILLER: Cascade Drilling	CORE RECOVERY	# SAMPLES	# CORE BOXES	DEPTH TOP OF ROCK
DRILL MAKE AND MODEL: Geoprobe 7822 DT	LOGGED BY: B. Lary			DEPTH BOTTOM OF HOLE: 5.25

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA: SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./ Completion	PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
0			Vegetation in brown, loose, dry, fine SAND with roots.						
			Observed a 1 foot layer of gravel.			30			
			Black, soft, moist fine sandy SILT (ML).						
5			End of boring; backfill with hydrated bentonite chips.	B01/5				0.5	
10									
15									
20									
25									
30									
35									

EVREN Northwest, Inc.

DRILL LOG

PROJECT	PROJECT NO.	BORING NO.
McMinnville Honda Dealership	1375-19001-02	B02

SITE	BEGUN	COMPLETED	HOLE SIZE	ANGLE FROM HORIZ.
8515 NE Lone Oak Road, McMinnville, Oregon	9/16/19	9/16/19	2 inches	90

COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER	GROUND ELEVATION

DRILLER	CORE RECOVERY	# SAMPLES	# CORE BOXES	DEPTH TOP OF ROCK
Cascade Drilling				

DRILL MAKE AND MODEL	LOGGED BY:	DEPTH BOTTOM OF HOLE
Geoprobe 7822 DT	B. Lary	5.25

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA: SAMPLE NO.	SAMPLE DATA: SAMPLE TYPE	SAMPLE DATA: CORE RECOVERY	SAMPLE DATA: MW Const./ Completion	PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
0			Vegetation in brown, loose, dry fine SAND with roots. Observed a 1 foot layer of gravel.			40			
			Dark brown, medium stiff, moist, fine sandy SILT (ML) with trace gravel.						
5			End of boring; backfill with hydrated bentonite chips.	B02/5				0.2	
10									
15									
20									
25									
30									
35									

EVREN Northwest, Inc.

DRILL LOG

PROJECT	PROJECT NO.	BORING NO.
McMinnville Honda Dealership	1375-19001-02	B03

SITE	BEGUN	COMPLETED	HOLE SIZE	ANGLE FROM HORIZ.
8515 NE Lone Oak Road, McMinnville, Oregon	9/16/19	9/16/19	2 inches	90

COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER	GROUND ELEVATION

DRILLER	CORE RECOVERY	# SAMPLES	# CORE BOXES	DEPTH TOP OF ROCK
Cascade Drilling				

DRILL MAKE AND MODEL	LOGGED BY:	DEPTH BOTTOM OF HOLE
Geoprobe 7822 DT	B. Lary	20

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA: SAMPLE NO.	SAMPLE DATA: SAMPLE TYPE	SAMPLE DATA: CORE RECOVERY	SAMPLE DATA: MW Const./ Completion	PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
0			Asphalt over base gravel.						
			Observed abundant roots.			70		0.0	
			Dark gray-green with dark brown mottling, dense, slightly moist, fine sandy SILT (ML).						
5								0.1	
						60			
			Gray-green, medium dense, moist, silty fine SAND (SM), micaceous.	B03/8				0.0	Appeared to be native.
10								0.0	
			Becomes mottled gray-green and medium brown.			70			
			Grades to brown with red-brown veining.						
15			Grades from moist to wet.	B03/15				0.0	
			Grades to wet sandy layers interbedded with moist siltier layers.	B03/GW20		50			Screen: 15-20' bgs DTW: 13.52' bgs
20			End of boring; backfill with hydrated bentonite chips.					0.0	
25									
30									
35									

EVREN Northwest, Inc.

DRILL LOG

PROJECT	PROJECT NO.	BORING NO.
McMinnville Honda Dealership	1375-19001-02	B04

SITE	BEGUN	COMPLETED	HOLE SIZE	ANGLE FROM HORIZ.
8515 NE Lone Oak Road, McMinnville, Oregon	9/16/19	9/16/19	2 inches	90

COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER	GROUND ELEVATION

DRILLER	CORE RECOVERY	# SAMPLES	# CORE BOXES	DEPTH TOP OF ROCK
Cascade Drilling				

DRILL MAKE AND MODEL	LOGGED BY:	DEPTH BOTTOM OF HOLE
Geoprobe 7822 DT	B. Lary	20

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA: SAMPLE NO.	SAMPLE DATA: SAMPLE TYPE	SAMPLE DATA: CORE RECOVERY	SAMPLE DATA: MW Const./ Completion	PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
0			Asphalt over base sandy gravel.			50			
5			Dark brown, medium stiff, moist, fine sandy SILT (ML), trace gravel.	B04/5				0.0	
			Grades to medium brown with red-brown veining.			70		11.1	Petroleum odor.
			Grades to gray-green, medium dense, dry, silty fine SAND (SM), micaceous.						
10			Becomes slightly moist.	B04/10				807	
			Interbedded silty fine SAND and fine sandy SILT layers.			75			
				B04/13.5				601	
15			Becomes wet.					460	
			Grades to dark gray and wet.	B04/GW20					Screen: 10-20' bgs DTW: 14.9' bgs
						75			
			Becomes mottled brown and gray.						
20			End of boring; backfill with hydrated bentonite chips.					1.6	
25									
30									
35									

EVREN Northwest, Inc.

DRILL LOG

PROJECT	PROJECT NO.	BORING NO.
McMinnville Honda Dealership	1375-19001-02	B05

SITE	BEGUN	COMPLETED	HOLE SIZE	ANGLE FROM HORIZ.
8515 NE Lone Oak Road, McMinnville, Oregon	9/16/19	9/16/19	2 inches	90

COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER	GROUND ELEVATION

DRILLER	CORE RECOVERY	# SAMPLES	# CORE BOXES	DEPTH TOP OF ROCK
Cascade Drilling				

DRILL MAKE AND MODEL	LOGGED BY:	DEPTH BOTTOM OF HOLE
Geoprobe 7822 DT	B. Lary	20

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA: SAMPLE NO.	SAMPLE DATA: SAMPLE TYPE	SAMPLE DATA: CORE RECOVERY	SAMPLE DATA: MW Const./ Completion	PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
0			Asphalt over base sandy gravel.						
			Brown, medium dense, slightly moist, fine sandy SILT (ML), micaceous.			80			
5				B05/5				2.5	
			Observed a 2 inch dark gray sandy GRAVEL with some silt.			80		0.0	
10								0.5	
			Becomes wet.	B05/12.5		60			Petroleum odor.
15								0.2	
			Interbedded moist siltier and wet sandier layers	B05/GW20		100			Screen: 10-20' bgs DTW: 14.3' bgs
20			End of boring; backfill with hydrated bentonite chips.					0.4	
25									
30									
35									

EVREN Northwest, Inc.

DRILL LOG

PROJECT	PROJECT NO.	BORING NO.
McMinnville Honda Dealership	1375-19001-02	B06

SITE	BEGUN	COMPLETED	HOLE SIZE	ANGLE FROM HORIZ.
8515 NE Lone Oak Road, McMinnville, Oregon	9/16/19	9/16/19	2 inches	90

COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER	GROUND ELEVATION

DRILLER	CORE RECOVERY	# SAMPLES	# CORE BOXES	DEPTH TOP OF ROCK
Cascade Drilling				

DRILL MAKE AND MODEL	LOGGED BY:	DEPTH BOTTOM OF HOLE
Geoprobe 7822 DT	B. Lary	20

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA: SAMPLE NO.	SAMPLE DATA: SAMPLE TYPE	SAMPLE DATA: CORE RECOVERY	SAMPLE DATA: MW Const./ Completion	PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
0			Asphalt over base gravel.						
			Brown, medium dense, slightly moist, silty fine SAND (SM), micaceous.			85			
5								0.0	
						60			
			Increased to dense and moist.						
10								0.2	
			Interbedded siltier and sandier layers.						
			Becomes wet and in a sandier layer.	B06/12.5		100			
15								0.0	
			Entire core from 15 to 20 is very wet, loose and sandy.	B06/GW20		100			Screen: 10-20' bgs DTW: 14.6' bgs
20			End of boring; backfill with hydrated bentonite chips.					0.1	
25									
30									
35									

EVREN Northwest, Inc.

DRILL LOG

PROJECT	PROJECT NO.	BORING NO.
McMinnville Honda Dealership	1375-19001-02	B07

SITE	BEGUN	COMPLETED	HOLE SIZE	ANGLE FROM HORIZ.
8515 NE Lone Oak Road, McMinnville, Oregon	9/16/19	9/16/19	2 inches	90

COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER	GROUND ELEVATION

DRILLER	CORE RECOVERY	# SAMPLES	# CORE BOXES	DEPTH TOP OF ROCK
Cascade Drilling				

DRILL MAKE AND MODEL	LOGGED BY:	DEPTH BOTTOM OF HOLE
Geoprobe 7822 DT	B. Lary	25

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA: SAMPLE NO.	SAMPLE DATA: SAMPLE TYPE	SAMPLE DATA: CORE RECOVERY	SAMPLE DATA: MW Const./ Completion	PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
0			Asphalt over base gravel.						
			Dark brown to brown, medium stiff, moist, fine sandy SILT (ML).	B07/3		60			
5			Grades to medium brown, medium dense, slightly moist, silty fine SAND (SM), micaceous.			60		0.1	
10			Grades to interbedded siltier and sandier layers.			60		0.2	
15			Increase in moisture. Becomes wet in the sandier layers,			50		0.2	
20				B07/GW25		100		0.0	Screen: 15-25' bgs DTW: 19.9' bgs
25			End of boring; backfill with hydrated bentonite chips.					0.1	
30									
35									

EVREN Northwest, Inc.

DRILL LOG

PROJECT	PROJECT NO.	BORING NO.
McMinnville Honda Dealership	1375-19001-02	B08

SITE	BEGUN	COMPLETED	HOLE SIZE	ANGLE FROM HORIZ.
8515 NE Lone Oak Road, McMinnville, Oregon	9/16/19	9/16/19	2 inches	90

COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER	GROUND ELEVATION

DRILLER	CORE RECOVERY	# SAMPLES	# CORE BOXES	DEPTH TOP OF ROCK
Cascade Drilling				

DRILL MAKE AND MODEL	LOGGED BY:	DEPTH BOTTOM OF HOLE
Geoprobe 7822 DT	B. Lary	30

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA: SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./ Completion	PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
0			Grass over topsoil. Dark brown, medium dense, moist, silty fine SAND with lots of roots.			80			
			Medium brown, medium dense, slightly moist silty fine SAND (SM), micaceous.	B08/3.5				0.5	
5						75			
10			Grades from slightly moist to moist.			90		0.2	
15			Becomes wet in sandy layers which are interbedded with the siltier layers.			85		0.0	
20			Grades to mostly fine sandy SILT (ML)with wet interbedded sandier layers.			100		0.1	Screened from 15 to 25' bgs but insufficient GW for sampling.
25			Appears to be wet down to 26.5' bgs and then becomes moist.	B08/GW30		100		0.3	Screen: 20- 30'bgs DTW: 23.4' bgs
30			End of boring; backfill with hydrated bentonite chips.					0.3	
35									

Appendix C

Field Sampling Data Sheets

EVREN Northwest

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: 1375-19001-02 Honda Dealership PROJECT NUMBER: 1375-19001-02

Event: GW assessment Date: 09-16-19

Field Personnel: Dan Sayko Monitoring Well ID: B03

Weather Conditions: Mostly Sunny Start Time: 10:15

DTW (prior to purging): 13.52

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate mL/min (L/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), , ±0.1%	ORP (mV), , ±10 mV	Turbidity (NTU), , ±10%	Total Quantity Purged (gallons/liters)
10:17		200mL	Brown / Turbid						0
10:22		1	Light brown / Turbid						1.0
10:22		150	Light brown Less turbid						1.75
10:35		1	Tan milky						3.0
10:37			Begin collecting (Ambers 1st)						3.3

Total Purged: 3.3

Tubing: 3/8" LDPE

Purge Pumping Rate (approx. L/m): ~ 160 mL/min

Well casing (in. diam): 1" PVC

Decontamination method:

Approx. Pump/Intake Depth: ~ 17 bgs

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

WELL CONDITION

Recommended Well Repairs/Additional Notes: screened from 15'-20' bgs

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

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

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
	FTB	None	(1) Liter	2	B03/GW 20	10:56
		None	500 mL	1		
		HCl	40mL	4		

Method of Transportation of samples: FedEx Courier

All samples were immediately placed into a cooler and packed with ice or "blue Ice" ☒ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

EVREN Northwest **GROUND WATER FIELD SAMPLING DATA FORM (FIELD)**

PROJECT NAME: Mcminnville Honda Dealership PROJECT NUMBER: 1375-19001-02

Event: GW assessment Date: 09/16/19

Field Personnel: Dan Sajko TEMP Monitoring Well ID: B04

Weather Conditions: mostly sunny Start Time: 11:04

DTW (prior to purging): 14.9

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate mL/min	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), , ±0.1%	ORP (mV), , ±10 mV	Turbidity (NTU), , ±10%	Total Quantity Purged (gallons/liters)
11:06		150	Dark Brown/Gray			very Turbid			
11:10		1	starting to run dry, lowered intake/rate						0.6
11:13		120	Brown and less turbid						1.0
11:17			Tan						1.5
11:18			Begin collecting samples						
		*	ran dry while collecting 1st sample						

Total Purged: 1.5

Tubing: 3/8" LDPE

Purge Pumping Rate (approx. L/m): ~125 mL/min Well casing (in. diam): 1" PVC

Decontamination method: Approx. Pump/Intake Depth: ~17.5 bgs

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

WELL CONDITION

Recommended Well Repairs/Additional Notes: * lowered intake to 19 after 4 min of purge

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

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

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
HOLD	FTB	none	1 Liter	1	B04/GW20	11:52
		none	500 ml	2		
1	1	HCL	40 mL	4		

Method of Transportation of samples: FedEx ~~Courier~~

All samples were immediately placed into a cooler and packed with ice or "blue Ice" ☒ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

EVREN Northwest GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: Honda Dealership PROJECT NUMBER: 1375-1900c-02

Event: GW assessment Date: 09/16/19

Field Personnel: Dan Sayleo TEMP Monitoring Well ID: B05

Weather Conditions: Mostly Sunny Start Time: 11:55

DTW (prior to purging): 14.3'

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (L/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), , ±10%	Water pH (S.U.), , ±0.1%	ORP (mV), , ±10 mV	Turbidity (NTU), , ±10%	Total Quantity Purged (gallons/liters)
11:56	—	125	Brown / very turbid						Ø
12:04		"	light brown less turbid						1.0
12:14		"	tan						2.25
12:15			Begin collection of sample						

Total Purged: 2.25

Tubing: 3/8" LDPE

Purge Pumping Rate (approx. L/m):

Well casing (in. diam): 1" PVC

Decontamination method:

Approx. Pump/Intake Depth: 18' bgs

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

WELL CONDITION

Recommended Well Repairs/Additional Notes: Screened from 10-20 bgs

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

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

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
4 VOCs	FGS	none	1 Liter	1	B05/GW 20	12:30
1	1	none	500 mL	2		
		HCl	40 mL	4		

Method of Transportation of samples: FedEx Courier

All samples were immediately placed into a cooler and packed with ice or "blue Ice" ☒ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

EVREN Northwest GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: Merriman ville Honda Dealership PROJECT NUMBER: 1375-1900-02

Event: GW assessment Date: 09/16/19

Field Personnel: Dan Sayko Monitoring Well ID: B07

Weather Conditions: Mostly Sunny Start Time: 13:31

DTW (prior to purging): 19.9'

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (mL/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), , ±0.1%	ORP (mV), , ±10 mV	Turbidity (NTU), , ±10%	Total Quantity Purged (gallons/liters)
13:33		150	Brown / Turbid						0
13:41		"	Light brown			less turbid			1.2
13:44		"	tan — began			collecting			1.75

Total Purged: 1.75

Tubing: 3/8" LDPE

Purge Pumping Rate (approx. L/m): 150 mL/min Well casing (in. diam): 1" PVC

Decontamination method: Approx. Pump/Intake Depth: ~23'

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

WELL CONDITION

Recommended Well Repairs/Additional Notes: Screened from 15' - 25'

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

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

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
Hand	Fri3	none	1 Liter	1	B07/GW25	14:00
1	1	none	500mL	2	1	
			40 mL	4		

Method of Transportation of samples: FedEx Courier

All samples were immediately placed into a cooler and packed with ice or "blue Ice" ☒ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

EVREN Northwest

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: Honda Dealership

PROJECT NUMBER: 1375-1[illegible]-02

Event: GW assessment

Date: 09/16/19

Field Personnel: Dan Sajko

TEMP ~~Monitoring~~ Well ID: B06

Weather Conditions: mostly sunny

Start Time: 12:43

DTW (prior to purging): 4.6'

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (mL/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), , ±0.1%	ORP (mV), , ±10 mV	Turbidity (NTU), , ±10%	Total Quantity Purged (gallons/liters)
12:45	—	150	Brown / turbid						0
12:53		"	light brown						1.20
13:01		"	Tan						2.4
13:02		1	Begin collecting sample						2.5
								Total Purged:	2.5

Tubing: 3/8" LDPE

Purge Pumping Rate (approx. L/m): 150 mL/min

Well casing (in. diam): 1" PVC

Decontamination method:

Approx. Pump/Intake Depth: ~18' bgs

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

WELL CONDITION

Recommended Well Repairs/Additional Notes: Screened from 10-20 bgs

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

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

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
	F+B	none	1 Liter	1	B06/GW20	13:25
		none	500mL	3		
	1	HCl	40mL	4	1	

Method of Transportation of samples: FedEx Courier

All samples were immediately placed into a cooler and packed with ice or "blue Ice" ☒ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

EVREN Northwest GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: _____ PROJECT NUMBER: 1375-1901-02

Event: GW Assessment Date: 09/16/19

Field Personnel: Dan Sayles TEMP ~~Monitoring~~ Well ID: BOB

Weather Conditions: mostly sunny Start Time: 15:10

DTW (prior to purging): 23.40

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (mL/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L) , ±10%	Water pH (S.U.), , ±0.1%	ORP (mV), , ±10 mV	Turbidity (NTU), , ±10%	Total Quantity Purged (gallons/liters)
15:12		180	Brown very turbid						∅
15:20		"	Light brown less turbid						1.8
15:24		"	begin collection						2.7

Total Purged:

Tubing: 3/8" LDPE

Purge Pumping Rate (approx. L/m): 180 mL/min

Well casing (in. diam): 1" PVC

Decontamination method:

Approx. Pump/Intake Depth: 29.5'

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

WELL CONDITION

Recommended Well Repairs/Additional Notes:

Screened from 20'-30' bgs

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

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

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
Hold	TqB	None	1 Liter	1	BOB/GW 30	15:40
1	1	None	500 mL	3		
		HCl	40mL	4		

Method of Transportation of samples: FedEx (Courier)

All samples were immediately placed into a cooler and ~~packed~~ with ice or "blue Ice" ☒ Yes ☐ No

Field Observations/Notes of sampling event:

Attempted purging @ 25 bgs, not enough water Dried deeper to 30'.

Signature of Field Personnel:

Appendix D

Laboratory Analytical Results

Summary: DATA VALID? ☒YES

Analytical Laboratory Data Validation Check Sheet

Project Name: 8515 & 3026 Lone Oak Rd. N Project Number: 1375-19001-02

Date of Review: 9/25/2019 Lab. Name: **F&BI** Lab Batch ID #: **909278**

Chain of Custody

1.) Are all requested analyses reported?	☒yes	☐no	
2.) Were the requested methods used?	☒yes	☐no	
3.) Trip blank submitted?	☐yes	☒no	
4.) Field blank submitted?	☐yes	☒no	
Timing			
5.) Samples extracted within holding times?	☒yes	☐no	
If not, are all discrepancies footnoted?	☐yes	☐no	
6.) Analysis performed within holding times?	☒yes	☐no	
If not, are all discrepancies footnoted?	☐yes	☐no	
Quality Assurance/Quality Control			
7.) Are the required reporting limits reported? (MRLs vs MDLs/PQLs)	☒yes	☐no	
8.) Are all reported values above either MRL or MDL?	☒yes	☐no	
9.) Are all values between the MDL & PQL tagged as trace?	☐yes	☐no	☒NA
10a.) Are reporting limits raised for other reason besides high analyte conc.?	☐yes	☒no	
10b.) If so, are they footnoted?	☐yes	☐no	☒NA
11.) Lab method blank completed?	☒yes	☐no	
12.) Lab, Field, or Trip Blank(s) report detections?	☐yes	☒no	

If yes, indicate blank type, chemical(s) and concentration(s): _____

13.) For inorganics and metals, is there one method blank for each analyte?	☒yes	☐no	☐NA
If not, are all discrepancies footnoted?	☐yes	☐no	
14.) For VOCs, is there one method blank for each day of analysis?	☒yes	☐no	☐NA
If not, are all discrepancies footnoted?	☐yes	☐no	
15.) For SVOC's, is there one method blank for each extraction batch?	☒yes	☐no	☐NA
If not, are all discrepancies footnoted?	☐yes	☐no	
Accuracy			
16.) Is there a surrogate spike recovery for all VOC & SVOC samples?	☒yes	☐no	☐NA
Do all surrogate spike recoveries meet accepted criteria?	☒yes	☐no	
If not, are all discrepancies footnoted?	☐yes	☐no	☒NA
17.) Is there a spike recovery for all Laboratory Control Samples?	☒yes	☐no	☐NA
Do all LCS spike recoveries meet accepted criteria?	☒yes	☐no	
Precision			
18.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits?	☒yes	☐no	☐NA
19.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits?	☒yes	☐no	☐NA
If not, are all discrepancies footnoted?	☐yes	☐no	☒NA
20.) Do all RPD calculations for Field Duplicates meet accepted criteria?	☐yes	☐no	☒NA

Comments:

Initial Review By: CD **Final** Review By: _____

Summary: DATA VALID? ☒YES

Analytical Laboratory Data Validation Check Sheet

Project Name: 8515&3026 Lone Oak Rd. Project Number: 1375-19001-02

Date of Review: 10/02/2019 Lab. Name: **F&BI** Lab Batch ID #: **909277 Additional**

Chain of Custody

1.) Are all requested analyses reported?	☒yes	☐no	
2.) Were the requested methods used?	☒yes	☐no	
3.) Trip blank submitted?	☐yes	☒no	
4.) Field blank submitted?	☐yes	☒no	
Timing			
5.) Samples extracted within holding times?	☒yes	☐no	
If not, are all discrepancies footnoted?	☐yes	☐no	
6.) Analysis performed within holding times?	☒yes	☐no	
If not, are all discrepancies footnoted?	☐yes	☐no	
Quality Assurance/Quality Control			
7.) Are the required reporting limits reported? (MRLs vs MDLs/PQLs)	☒yes	☐no	
8.) Are all reported values above either MRL or MDL?	☒yes	☐no	
9.) Are all values between the MDL & PQL tagged as trace?	☐yes	☐no	☒NA
10a.) Are reporting limits raised for other reason besides high analyte conc.?	☐yes	☒no	
10b.) If so, are they footnoted?	☐yes	☐no	☒NA
11.) Lab method blank completed?	☒yes	☐no	
12.) Lab, Field, or Trip Blank(s) report detections?	☐yes	☒no	

If yes, indicate blank type, chemical(s) and concentration(s): _____

13.) For inorganics and metals, is there one method blank for each analyte?	☐yes	☐no	☒NA
If not, are all discrepancies footnoted?	☐yes	☐no	
14.) For VOCs, is there one method blank for each day of analysis?	☒yes	☐no	☐NA
If not, are all discrepancies footnoted?	☐yes	☐no	
15.) For SVOC's, is there one method blank for each extraction batch?	☒yes	☐no	☐NA
If not, are all discrepancies footnoted?	☐yes	☐no	
Accuracy			
16.) Is there a surrogate spike recovery for all VOC & SVOC samples?	☒yes	☐no	☐NA
Do all surrogate spike recoveries meet accepted criteria?	☒yes	☐no	
If not, are all discrepancies footnoted?	☐yes	☐no	☒NA
17.) Is there a spike recovery for all Laboratory Control Samples?	☒yes	☐no	☐NA
Do all LCS spike recoveries meet accepted criteria?	☒yes	☐no	
Precision			
18.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits?	☒yes	☐no	☐NA
19.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits?	☒yes	☐no	☐NA
If not, are all discrepancies footnoted?	☐yes	☐no	☒NA
20.) Do all RPD calculations for Field Duplicates meet accepted criteria?	☐yes	☐no	☒NA

Comments:

Initial Review By: CD **Final** Review By: _____

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 24, 2019

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

Dear Mr Green:

Included are the results from the testing of material submitted on September 17, 2019 from the 1375-19001-02, F&BI 909278 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Neil Woller, Paul Trone
ENW0924R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 17, 2019 by Friedman & Bruya, Inc. from the Evren Northwest 1375-19001-02, F&BI 909278 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
909278 -01	B01/5
909278 -02	B02/5
909278 -03	B03/8
909278 -04	B03/15
909278 -05	B04/5
909278 -06	B04/10
909278 -07	B04/13.5
909278 -08	B05/5
909278 -09	B05/12.5
909278 -10	B06/12.5
909278 -11	B07/3
909278 -12	B08/3.5

All quality control requirements were acceptable.

Date of Report: 09/24/19
Date Received: 09/17/19
Project: 1375-19001-02, F&BI 909278
Date Extracted: 09/17/19
Date Analyzed: 09/17/19

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 56-165)
B01/5 909278-01	ND	ND	ND	91
B02/5 909278-02	ND	ND	ND	100
B03/8 909278-03	ND	ND	ND	91
B04/10 909278-06	D	ND	ND	88
B06/12.5 909278-10	ND	ND	ND	93
B07/3 909278-11	ND	ND	ND	91
B08/3.5 909278-12	ND	ND	ND	100
Method Blank 09-2292 MB	ND	ND	ND	87

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 09/24/19
Date Received: 09/17/19
Project: 1375-19001-02, F&BI 909278
Date Extracted: 09/20/19
Date Analyzed: 09/20/19

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
B04/10 909278-06 1/10	290	110
Method Blank 09-2306 MB	<5	84

Analysis For Total Metals By EPA Method 6020B

Client ID:	B04/10	Client:	Evren Northwest
Date Received:	09/17/19	Project:	1375-19001-02, F&BI 909278
Date Extracted:	09/19/19	Lab ID:	909278-06
Date Analyzed:	09/19/19	Data File:	909278-06.074
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	8.30

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	1375-19001-02, F&BI 909278
Date Extracted:	09/19/19	Lab ID:	I9-575 mb
Date Analyzed:	09/19/19	Data File:	I9-575 mb.038
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B04/10	Client:	Evren Northwest
Date Received:	09/17/19	Project:	1375-19001-02, F&BI 909278
Date Extracted:	09/19/19	Lab ID:	909278-06
Date Analyzed:	09/19/19	Data File:	091909.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	93	107
Toluene-d8	105	87	110
4-Bromofluorobenzene	101	85	112

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	0.34
m,p-Xylene	1.6
o-Xylene	0.52
Isopropylbenzene	0.071
n-Propylbenzene	0.16
1,3,5-Trimethylbenzene	0.50
1,2,4-Trimethylbenzene	1.1
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1375-19001-02, F&BI 909278
Date Extracted:	09/19/19	Lab ID:	09-2255 mb
Date Analyzed:	09/19/19	Data File:	091908.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	93	107
Toluene-d8	104	87	110
4-Bromofluorobenzene	97	85	112

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Isopropylbenzene	<0.05
n-Propylbenzene	<0.05
1,3,5-Trimethylbenzene	<0.05
1,2,4-Trimethylbenzene	<0.05
Naphthalene	<0.05

Date of Report: 09/24/19
Date Received: 09/17/19
Project: 1375-19001-02, F&BI 909278

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 909345-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	105	71-131

Date of Report: 09/24/19
Date Received: 09/17/19
Project: 1375-19001-02, F&BI 909278

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 909317-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	mg/kg (ppm)	50	2.29	96	103	75-125	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	mg/kg (ppm)	50	108	80-120

Date of Report: 09/24/19
Date Received: 09/17/19
Project: 1375-19001-02, F&BI 909278

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 909332-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	74	85	17-134	14
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	84	87	22-124	4
Benzene	mg/kg (ppm)	2.5	<0.03	81	84	26-114	4
Toluene	mg/kg (ppm)	2.5	<0.05	85	88	34-112	3
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	88	92	32-126	4
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	89	91	34-115	2
m,p-Xylene	mg/kg (ppm)	5	<0.1	90	91	25-125	1
o-Xylene	mg/kg (ppm)	2.5	<0.05	88	89	27-126	1
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	91	93	34-123	2
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	89	92	31-120	3
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	88	93	24-130	6
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	0.090	87	91	35-116	4
Naphthalene	mg/kg (ppm)	2.5	<0.05	95	96	24-139	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	97	72-122
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	105	73-111
Benzene	mg/kg (ppm)	2.5	99	72-106
Toluene	mg/kg (ppm)	2.5	97	74-111
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	104	77-117
Ethylbenzene	mg/kg (ppm)	2.5	97	75-112
m,p-Xylene	mg/kg (ppm)	5	97	77-115
o-Xylene	mg/kg (ppm)	2.5	93	76-115
Isopropylbenzene	mg/kg (ppm)	2.5	96	76-120
n-Propylbenzene	mg/kg (ppm)	2.5	98	77-115
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	99	77-121
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	97	77-119
Naphthalene	mg/kg (ppm)	2.5	99	73-122

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

909278

SAMPLE CHAIN OF CUSTODY

ME 09-17-19

Page # 1 of 2 CI2

Report To LYNN GREEN

Company EVREN NORTHWEST

Address 40 SE 24th UNIT A

City, State, ZIP PORTLAND, OR 97214

Phone 503-452-5561 Email

SAMPLERS (signature) Barb Lary

PROJECT NAME 1375-19001-02

PO #

REMARKS

INVOICE TO

TURNAROUND TIME
- ☐ Standard Turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	HOLD	RBDM VOLs	Lead		Notes
B01/5	01	9/16/19	945	SOIL	1	X											(X) - per LG
B02/5	02		952		1	X											9/18/19 ML
B03/8	03		1003		1	X											
B03/15	04A-E		10:10		5								X				
B04/5	05		10:25		1								X				
B04/10	06A-E		1045		5	X		(X)						(X)	(X)		
B04/13.5	07		10:40		5								X				
B05/5	08		11:10		1								X				
B05/12.5	09		11:15		1								X				
B06/12.5	10		12:17		1	X											

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Barb Lary	BARB LARY	ENW	9/16/19	1800
Received by:	Nhan Pham	FedEx	9/17/19	0948
Relinquished by:				
Received by:		Samples received at 2 °C		

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

909278

SAMPLE CHAIN OF CUSTODY

ME 09-17-19

Page # 2 of 2 CI2

Report To LYNN GREEN

Company EVREN NORTHWEST

Address 40 SE 24th UNIT A

City, State, ZIP PORTLAND, OR 97214

Phone 503-452-5561 Email

SAMPLERS (*signature*) Barb Lary

PROJECT NAME 1375-1901-02

PO #

REMARKS

INVOICE TO

TURNAROUND TIME
- ☐ Standard Turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
B07/3	11	9/16/19	1255	SOIL	1	X											
B08/3.5	12	↓	1358	↓	1	X											

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Barb Lary	BARB LARY	ENW	9/16/19	1800
Received by:	Nhan Phan	FedEx	9/17/19	0948
Relinquished by:				
Received by:		Samples received at 2 °C		

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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October 2, 2019

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

Dear Mr Green:

Included are the additional results from the testing of material submitted on September 17, 2019 from the 1375-19001-02, F&BI 909277 project. There are 9 pages included in this report.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Neil Woller, Paul Trone
ENW1002R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 17, 2019 by Friedman & Bruya, Inc. from the Evren Northwest 1375-19001-02, F&BI 909277 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
909277 -01	B03/GW20
909277 -02	B04/GW20
909277 -03	B05/GW20
909277 -04	B06/GW20
909277 -05	B07/GW25
909277 -06	B08/GW30

All quality control requirements were acceptable.

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	B04/GW20	Client:	Evren Northwest
Date Received:	09/17/19	Project:	1375-19001-02, F&BI 909277
Date Extracted:	09/26/19	Lab ID:	909277-02
Date Analyzed:	09/27/19	Data File:	092709.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	79	31	160
Benzo(a)anthracene-d12	75	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	2.4
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	0.096
Phenanthrene	0.021
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	B05/GW20	Client:	Evren Northwest
Date Received:	09/17/19	Project:	1375-19001-02, F&BI 909277
Date Extracted:	09/26/19	Lab ID:	909277-03
Date Analyzed:	09/27/19	Data File:	092710.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	93	31	160
Benzo(a)anthracene-d12	79	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1375-19001-02, F&BI 909277
Date Extracted:	09/26/19	Lab ID:	09-2367 mb
Date Analyzed:	09/27/19	Data File:	092706.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	92	31	160
Benzo(a)anthracene-d12	97	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	B04/GW20	Client:	Evren Northwest
Date Received:	09/17/19	Project:	1375-19001-02, F&BI 909277
Date Extracted:	09/25/19	Lab ID:	909277-02
Date Analyzed:	09/25/19	Data File:	092536.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	20 ip	24	127

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.1
Aroclor 1232	<0.1
Aroclor 1016	<0.1
Aroclor 1242	<0.1
Aroclor 1248	<0.1
Aroclor 1254	<0.1
Aroclor 1260	<0.1
Aroclor 1262	<0.1
Aroclor 1268	<0.1

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1375-19001-02, F&BI 909277
Date Extracted:	09/25/19	Lab ID:	09-2366 mb
Date Analyzed:	09/25/19	Data File:	092533.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	32	24	127

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.1
Aroclor 1232	<0.1
Aroclor 1016	<0.1
Aroclor 1242	<0.1
Aroclor 1248	<0.1
Aroclor 1254	<0.1
Aroclor 1260	<0.1
Aroclor 1262	<0.1
Aroclor 1268	<0.1

Date of Report: 10/02/19
Date Received: 09/17/19
Project: 1375-19001-02, F&BI 909277

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	1	81	85	57-114	5
Acenaphthylene	ug/L (ppb)	1	86	89	65-119	3
Acenaphthene	ug/L (ppb)	1	86	91	66-118	6
Fluorene	ug/L (ppb)	1	90	91	64-125	1
Phenanthrene	ug/L (ppb)	1	91	94	67-120	3
Anthracene	ug/L (ppb)	1	90	92	65-122	2
Fluoranthene	ug/L (ppb)	1	99	99	65-127	0
Pyrene	ug/L (ppb)	1	99	94	62-130	5
Benz(a)anthracene	ug/L (ppb)	1	94	98	60-118	4
Chrysene	ug/L (ppb)	1	94	97	66-125	3
Benzo(b)fluoranthene	ug/L (ppb)	1	90	88	55-135	2
Benzo(k)fluoranthene	ug/L (ppb)	1	92	95	62-125	3
Benzo(a)pyrene	ug/L (ppb)	1	88	91	58-127	3
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	86	87	36-142	1
Dibenz(a,h)anthracene	ug/L (ppb)	1	82	84	37-133	2
Benzo(g,h,i)perylene	ug/L (ppb)	1	81	84	34-135	4

Date of Report: 10/02/19
Date Received: 09/17/19
Project: 1375-19001-02, F&BI 909277

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.25	58	52	35-111	11
Aroclor 1260	ug/L (ppb)	0.25	62	60	29-130	3

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

909277

SAMPLE CHAIN OF CUSTODY

ME 09-17-19

Page # 1 of 1 ADS 1W3

Report To LYNN GREEN

Company EVREN NORTHWEST

Address 40 SE 24th Unit A

City, State, ZIP PORTLAND, OR 97214

Phone 503-452-5561 Email

SAMPLERS (signature) Barb Lary

PROJECT NAME 1375-1901-02

PO #

REMARKS

INVOICE TO

TURNAROUND TIME
- ☐ Standard Turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	Dissolved Lead	PCBs			Notes
B03/GW20	01A-G	9/16/19	10:56	GW	7		X	X		X							⊗-poLG
B04/GW20	02		11:52		7		X	X		X		⊗	⊗	⊗			9/25/19 ME
B05/GW20	03		12:30		7		X	X		X		⊗					insufficient sample
B06/GW20	04		1325		7		X	X		X							10/1/19 ME
B07/GW25	05		1400		7		X	X		X							
B08/GW30	06	↓	1540	↓	7		X	X		X							

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Barb Lary	BARB LARY	ENW	9/16/19	1800
Received by:	Nhan Phan	F&B I	9/17/19	948
Relinquished by:				
Received by:				

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

Appendix E

ODEQ Soil Matrix Cleanup Scoresheet

Soil Matrix Scoresheet

Depth to Ground Water < 25 feet (10) 25 – 50 feet (7) 51 – 100 feet (4) > 100 feet (1)	10
Mean Annual Precipitation > 45 inches (10) 20 – 45 inches (5) < 20 inches (1)	5
Native Soil Types Coarse sands, gravels (10) Silts, fine sands (5) Clays (1)	5
Sensitivity of uppermost Aquifer Sole Source (10) Current Potable (7) Future Potable (4) Non-potable (1)	7
Potential Receptors Many, near (10) Medium (5) Few, far (1)	10
TOTAL SCORE =	**37**

Matrix Score	Cleanup level in ppm TPH	
	Gasoline	Diesel
Level 1: > 40 pts.	40	100
Level 2: 25 - 40 pts.	**80**	**500**
Level 3: < 25 pts.	130	1000