UNDERGROUND STORAGE TANK INVESTIGATION REPORT

At

RICHLAND UPTOWN SHOPPING CENTER
Parcel 10
1364 Jadwin Avenue
Richland, Washington 99354

WA CLEANUP SITE ID: 11645
FACILITY SITE ID: 10144

December 10, 2020

Prepared for:

Washington Department of Ecology
CRO Toxics Cleanup Program
1250 W. Alder Street
Union Gap, WA 98903
Attn: Mr. Kyle Parker and Mr. Frank Winslow

Prepared by:

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509-520-4416

Brent Bergeron, LG, LHG

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1.0 PROJECT DESCRIPTION

1.1 Purpose and Objective

This underground storage tank (UST) investigation report, prepared by Blue Mountain Environmental & Consulting Co., Inc. (BMEC) for the Washington Department of Ecology (Ecology), presents the results of a soil and groundwater assessment of a former heating oil tank (HOT) at the Richland Uptown Shopping Center (Parcel 10 – Washington Cleanup Site ID 11645 and Facility Site ID 10144) located at 1364 Jadwin Avenue in Richland, Washington (hereafter referred to as the "Site"). **Figure 1** is a Site Vicinity Map.

The main objective of the field activities was to assess whether or not petroleum-related contaminants (total petroleum hydrocarbons – diesel range [TPH-D] and TPH – heavy oil range [TPH-O]) detected in Site soils in 1993 from former leaking HOTs that were decommissioned at that time are still impacting the subsurface soil and shallow groundwater at concentrations exceeding the Washington Model Toxics Control Act (MTCA) Method A Cleanup Levels. These Cleanup Levels are human health risk-based criteria designed to protect the environment from unhealthy exposure to petroleum contaminants. This report addresses the decommissioning of the 320-gallon HOT decommission via removal on the building interior on November 11, 2020.

1.2 Location

The legal description of the Site is as follows: Site address 1364 Jadwin Avenue – Parcel 10 (Washington Cleanup Site ID 11645 and Facility Site ID 10144). The property consists of one parcel of land with improvements. The Site is located in Benton County near the center of the polygon defined by Symons Street (north) - George Washington Way (east) – Williams Boulevard (south) – Jadwin Avenue (west). The Site is accessible from the east via an alley that trends north-south in the middle of the Upland Shopping Center and from the west via the front door of the business facing Jadwin Avenue. The Uptown Shopping Center is also accessible from the west via George Washington Way. The Site is located in the southwest quarter of Section 2, Township 9 North, Range 28 East of the Willamette Meridian.

Now surface water or wetlands are located on the Site. The property is located approximately 0.4 mile from the Columbia River to the east.

1.3 Organization

Client:	Washington Department of Ecology CRO Toxics Cleanup Program 1250 W. Alder Street Union Gap, WA 98903
Point of Contact:	Mr. Kyle Parker or Mr. Frank Winslow
Property:	1364 Jadwin Avenue – Parcel 10 (Washington Cleanup Site ID 11645 and Facility Site ID 10144)
Environmental Professional:	Yancy Meyer BMEC
Professional Geologist:	Brent Bergeron, LG, LHG BMEC
Report Date:	December 10, 2020

2.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

According to the ***UST Removal Project Limited ESA Uptown Shopping Center*** report (Huntingdon Report) completed by Huntingdon June 8, 1994, E.P. Johnson was hired by the City of Richland to decommission approximately 23 HOTs from the Uptown Shopping Center. Per the Huntingdon Report, two HOTs (Tanks # 21 and 22) were removed from an excavation immediately south of Parcel 10 and two HOTs (Tanks # 19 and 20) were left in place. The two HOTs that were removed (Tanks # 21 and 22) were each 283 gallons and contained #2 fuel oil.

Per Table 1 of the Huntingdon Report, soil samples yielding TPH concentrations of 13,000 mg/Kg (sidewall) and 6,400 mg/Kg (bottom) were collected from the Tank # 21 and 22 excavation and both concentrations exceeded MTCA Method A Cleanup Levels. Soil samples yielding TPH concentrations of 14 mg/Kg (sidewall) and 1,400 mg/Kg (bottom) were collected from the Tank # 19 and 20 excavation and neither TPH concentration exceeded MTCA Method A Cleanup Levels. Per Figures 3 and 4 of the Huntingdon Report, floating product was noted in the excavation of two HOTs (Tanks # 21 and 22) from the parcel immediately south of the Site; an excavation (Tanks # 19 and 20) located immediately east of the outside of the Parcel 10 (Site) building; and from the excavation of one HOT (Tank # 18) at Parcel 11 immediately to the north of the Site. Floating product was observed on the groundwater surface in all three HOT excavations and the groundwater surface was encountered at depths ranging from 10 to 10.5 feet below surface grade (bsg).

The Huntingdon Report also states that although an excavation occurred immediately south of Parcel 10 (Site), two HOTs were left in-place on the building interior. A tetrachloroethene (PCE)

concentration of 1,500 micrograms per liter (µg/L) was also detected in a groundwater sample obtained from less than 150 feet to the north of the Site from an up-gradient source(s).

Groundwater flow direction in the Huntingdon Report was reported as being to the south-southeast with a hydraulic gradient of 0.004 feet per foot. Floating product thicknesses on top of the groundwater surface in the immediate vicinity of the Site varied from 0.10" to 0.25".

Light, non-aqueous phase liquids (LNAPLs) were measured in monitoring well MW-2 on September 25, 2017 by BMEC personnel during a HOT investigation at Parcel 11 – 1368 Jadwin Avenue.

3.0 NOVEMBER 2020 FIELD ACTIVITIES

Prior to any subsurface intrusive work (i.e., excavation) at the Site, a private utility locator was hired to visit the Site and mark any underground tanks and/or underground utilities. Washington One-Call was also notified to mark all of the public underground utilities, prior to initiation of subsurface work.

Clarke Construction (Clarke) of Longview, Washington was subcontracted by BMEC to decommission the HOT(s). Once onsite on November 10, 2020, Clarke began saw-cutting the concrete located above the HOT, as approximated in outline by the private utility locator. The HOT was located inside of the building on a covered patio surrounded by walls and a roof (**Figure 2**). Photographs of the field activities are included in **Appendix A**. Subsequent to exposure of the top of the HOT, approximately 15 gallons of water and 10 gallons of rinse water were removed from the tank interior and containerized in a 55-gallon drum for future disposal at Oregon Recycling Company (ORRCO) in Portland, Oregon on November 12, 2020. A copy of the "emulsified oil and water" receipt is included in **Appendix B**. Approximately 2.5 gallons of LNAPL and decontamination water were also included in the 25-gallon total of recycled emulsified oil and water. The HOT was slightly corroded, but in overall good shape without any obvious holes. Thus, BMEC surmises that 15 gallons of rainwater entered the tank via an uncapped fill port on the outside of the building. A photograph of the uncapped fill port is included in **Appendix A**.

On November 11, 2020 and subsequent to using a small backhoe to remove the concrete, soil, and HOT, BMEC personnel were able to use a hand auger to collect soil samples from the bottom of the tank pit. Two soil samples were obtained, one from either end of the north-south oriented HOT, and from a depth exactly one foot below the bottom of the HOT. The bottom of the HOT was at about 6 feet bsg, thus the two soil samples (***N End-7'*** [aka 11645-01-N7'] and ***S End-7'*** [aka 11645-02-N7']) were obtained from a depth of 7 feet bsg each and 6 inches off each end of the tank. Locations of the two soil samples (N End-7' and S End-7') are illustrated on **Figure 3**. Attempts to hand auger down deeper than 7 feet bsg were unsuccessful due to refusal via coarse gravel.

Subsequent to tank removal, and soil sample collection, on November 11, 2020, Clarke placed the clean excavated soil back in the excavation, compacted it in 1-foot lifts, and backfilled with pea

gravel to a depth of about six inches bsg. The excavation was completed to surface grade with a 6-inch layer of cement.

An attempt was made to collect one groundwater sample from the existing monitoring well (MW-2) located about 12 feet southeast of Parcel 10 – Cleanup Site ID No. 11645. However, upon accessing monitoring well MW-2 and attempting to measure the depth-to-groundwater via a Solinst interface probe, it was determined that approximately 0.25' of light, non-aqueous phase liquid (LNAPL) was present on the groundwater surface. Since the depth-to-product was measured at 9.28 feet below top of casing (btoc), the approximated depth-to-groundwater is calculated at 9.53 feet btoc, and since the top of the well casing is approximately 0.5 feet bsg, the approximate depth-to-groundwater was 10.53 feet bsg.

Field screening measurements of the soil via photo-ionization detector (PID) indicated measurements of 0.1 relative units at 6 feet bsg on each end of the tank and 6.6 relative units on the N end and 36.8 relative units on the S end of the tank.

Grab groundwater samples from the base of the tank pit were not collected due to hand auger refusal at 7 feet bsg. A groundwater sample was not collected from monitoring well MW-2 due to LNAPL (0.25') in the well. Approximately 0.5 gallon of LNAPL (i.e., severely weathered heating oil) was removed from monitoring well MW-2 via a bailer and rope and placed in a 5-gallon bucket, prior to containerizing the LNAPL in a 55-gallon drum removed from the Site at the end of the day by Clarke. The contents of this drum were ultimately recycled at ORRCO on November 12, 2020.

A fresh pair of latex or Nitrile gloves were donned, prior to collection of each soil sample. All samples were stored in a cool environment (approximately 4 degrees Celsius) until relinquished (with properly completed chain-of-custody documentation) to Peter Trabusiner of BMEC who in turn relinquished the samples to OnSite Environmental Inc in Redmond, Washington.

The 320-gallon HOT was hauled offsite by Clarke on November 11, 2020 and recycled as scrap metal at Twin City Metals in Kennewick, Washington. A copy of the recycling receipt is included in **Appendix B**.

4.0 GEOLOGY AND HYDROGEOLOGY

Site soils encountered during the HOT decommissioning activities on November 11, 2020 were as follows:

- 0 to 6.5 feet bsg: Brown, fine to medium SAND, well-sorted, little well-rounded gravel, damp; and
- 6.5 to 7 feet bsg: Brown, fine to medium SAND AND GRAVEL, coarse, damp.

Soils encountered during a similar HOT investigation on September 25, 2017 at Parcel 11 (1368 Jadwin Avenue) immediately adjacent to and north of the Site, were as follows:

- 0 to 5 feet bsg: Brown, fine SAND, well-sorted, dry;
- 5 to 8 feet bsg: Brown, fine SAND, well-sorted, trace rounded coarse gravel, dry;
- 8 to 12 feet bsg: Brown, fine SAND, trace gravel, very moist;
- 12 to 13 feet bsg: Gray, fine SAND, little gravel, wet;
- 13 to 14 feet bsg: Gray, sandy GRAVEL, wet; and
- 14 to 15 feet bsg: Gray, fine SAND, little gravel, wet.

A mild petroleum odor was noted in soils obtained from depths of 12 to 15 feet bsg in boring BMEC-04. A copy of the boring log (BMEC-04) obtained from Parcel 11 in September 2017 is included in **Appendix C**.

On November 11, 2020, groundwater was encountered at about 10.5 feet bsg in monitoring well MW-2. Groundwater flow direction is inferred to be toward the Columbia River approximately 0.4 mile to the east-southeast. According to the Huntingdon Report completed by Huntingdon June 8, 1994, groundwater flow direction of the shallow aquifer was to the southeast in 1993 and depth to groundwater varied from 8 feet bgs in the north of the Uptown Shopping Center to 11 feet bgs in the south.

During the HOT decommissioning on September 25, 2017 at Parcel 11 immediately adjacent to and north of the Site, BMEC encountered very moist soils in borings BMEC-01 and BMEC-04 at depths of 7 feet bsg and 8 feet bsg respectively, which suggests that groundwater may rise to elevations of 7 to 8 feet bsg in the vicinity of the Site.

5.0 SAMPLE RESULTS

On November 11, 2020, LNAPL (0.25') was present in monitoring well MW-2; thus, a groundwater sample was not obtained for analysis. An approximation of the location of monitoring well MW-2 in reference to the HOT is illustrated on **Figures 2 and 3**. Furthermore, attempts to hand auger down deeper than 7 feet bsg in the HOT pit and obtain a groundwater sample were unsuccessful due to refusal via coarse gravel.

Both soil samples (N End-7' and S End-7') were submitted to OnSite on November 12, 2020 for total petroleum hydrocarbons (TPH) – diesel range (TPH-D) and TPH – heavy oil range (TPH-O) analysis via Northwest Method NWTPH-Dx, as well as volatile organic compounds via Environmental Protection Agency (EPA) Method 8260D. The location of soil samples N End-7' and S End-7' relative to the HOT is illustrated on **Figure 3.** No visual or PID evidence of petroleum contamination was noted on the bottom of the tank or in the soils at 6 feet bsg. PID readings of soil field screened beneath the HOT at depths of 6 feet bgs were 0.1 relative units from either end of the tank. Photographs of the 320-gallon HOT during removal activities and subsequent to removal, are included in **Appendix A**.

The TPH-D, TPH-O, and VOC results for soil samples N End-7' (aka 11645-01-N7') and S End-7' (aka 11645-02-N7') are summarized in **Table 1**:

TABLE 1: Soil Sample Results
Total Petroleum Hydrocarbon and Select Volatile Organic Compounds (mg/Kg)

Sample ID	Sample Depth (feet bsg)	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene
N End-7' (aka 11645-01-N7')	7'	**680**	< 78	< 0.0012	< 0.0058	< 0.0012	< 0.0035	< 0.028
S End 7' (aka 11645-02-N7')	7'	**42,000**	< 1,100	< 0.0060	< 0.030	**0.12**	**1.21**	**7.0**
MTCA Method A Cleanup Level (mg/Kg)		2,000	2,000	0.03	7	6	9	5

MTCA = Model Toxics Control Act
Bsg = below surface grade
Mg/Kg = milligrams per Kilogram or parts per million (ppm)
TPH-D = total petroleum hydrocarbons – diesel range
TPH-O = total petroleum hydrocarbons – heavy oil range

BOLD = detected at a concentration above the laboratory practical quantitation limit
BOLD = detected at a concentration exceeding the MTCA Method A Cleanup Level

Acetone at 0.053 mg/Kg, 135-trimethylbenzene at 0.0092 mg/Kg, 124-trimethylbenzene at 0.020 mg/Kg, sec-butylbenzene at 0.0030 mg/Kg, and p-isopropyltoluene at 0.065 mg/kg were also detected in soil sample N End-7'; however, MTCA Method A Cleanup Levels do not exist for any of these five VOCs.

Acetone at 0.39 mg/Kg, tetrachloroethene (PCE) at 0.024 mg/Kg, isopropylbenzene at 0.091 mg/Kg, n-propylbenzene at 0.19 mg/Kg, 135-trimethylbenzene at 1.4 mg/Kg, 124-trimethylbenzene at 3.4 mg/Kg, sec-butylbenzene at 0.29 mg/Kg, and p-isopropyltoluene at 0.40 mg/kg were also detected in soil sample S End-7'. Aside from PCE, MTCA Method A Cleanup Levels do not exist for any of the other seven VOCs. The MTCA Method A Cleanup Level for PCE in soil is 0.05 mg/Kg. Thus, at a concentration of 0.024 mg/Kg, the Cleanup Level for PCE was not exceeded. The slight detection of PCE in the soil sample is likely attributed to groundwater migration from an up-gradient source as indicated on Figure 4 of the Huntingdon Report.

A copy of the laboratory analytical report and accompanying chain-of-custody is included in **Appendix D**.

6.0 HEATING OIL TANK LIQUID DISPOSAL

All sampling tools (i.e., hand auger) were decontaminated via a warm soapy (Alconox) water solution and potable water rinse in between the collection of successive samples. The interface probe used to obtain a depth-to-water measurement was decontaminated via a soapy water solution, followed by a potable water rinse. All decontamination water (2 gallons) was containerized in 55-gallon drum removed from the Site at the end of the day by Clarke.

Approximately 15 gallons of water and 7.5 gallons of rinse water were removed from the tank interior and recycled at ORRCO on November 12, 2020. Included in the 25 gallons of recycled emulsified oil and water were approximately 0.5 gallon of LNAPL from monitoring well MW-2 and two gallons of decontamination water (25 gallons total). A copy of the "emulsified oil and water" receipt is included in **Appendix B**. All nitrile gloves, paper towels, bailers and rope were containerized in a plastic trash bag and disposed onsite as standard refuse.

7.0 CONCLUSIONS

BMEC supervised the tank removal, soil sampling, LNAPL removal, and backfill activities for the HOT decommissioning activities at 1364 Jadwin Avenue – Parcel 10 in Richland, Washington on November 10 and 11, 2020. Instead of two HOTs oriented east-west, as indicated in the Huntingdon Report (June 1994), one HOT was encountered and oriented north-south. The HOT was approximately 320 gallons in size. Approximately 15 gallons of (rain)water were removed from the tank interior and containerized in a 55-gallon drum for future disposal.

The decision to not collect a groundwater sample from monitoring well MW-2 was made due to the fact that 0.25' of LNAPL were observed in the well. Approximately 0.5 gallon of LNAPL were bailed from monitoring well MW-2 and properly disposed. Attempts to hand auger down deeper than 7 feet bsg in the HOT pit and obtain a groundwater sample were unsuccessful due to refusal via coarse gravel. The depth-to-groundwater in monitoring well MW-2 was measured to be approximately 10.53 feet bsg.

Soil samples (N End-7' [aka 11645-01-N7'] and S End-7' [aka 11645-02-N7']) were collected from both ends of the HOT at a depth (7 feet bsg) one foot below the bottom of the tank (6 feet bsg). The soil sample results indicate no MTCA Method A Cleanup Level exceedances in the soil sample collected from the north end of the tank (N End-7'); however, TPH-D (42,000 mg/Kg) and naphthalene (7.0 mg/Kg) concentrations in the soil sample collected from the south end of the tank (S End-7') exceed the MTCA Method A Cleanup Levels of 2,000 mg/Kg and 5 mg/Kg, respectively.

The slight detection of PCE in soil sample S End-7' is likely attributed to migration horizontally in the groundwater from former dry cleaners located at the Uptown Shopping Center, followed by vertical migration to a depth of 7 feet bsg.

The observation of LNAPL in monitoring well MW-2, as well as the detection of TPH-D at 42,00 mg/Kg and naphthalene at 7,000 mg/Kg in soil beneath the south end of the HOT (Tank # 19 or 20), is likely attributed to leaking HOTs that were documented in the Huntingdon Report. A relatively intact HOT and clean soil from 0 – 6.5 feet bsg in the excavation add credence to this theory.

If you have any questions regarding the contents of this report, please feel free to contact Mr. Peter Trabusiner at (509) 521-6531 or myself at (503) 913-7870.

Respectfully Submitted,

Brent N. Bergeron

Expires 1/3/21

Brent N. Bergeron, LG, LHG

8.0 REFERENCES

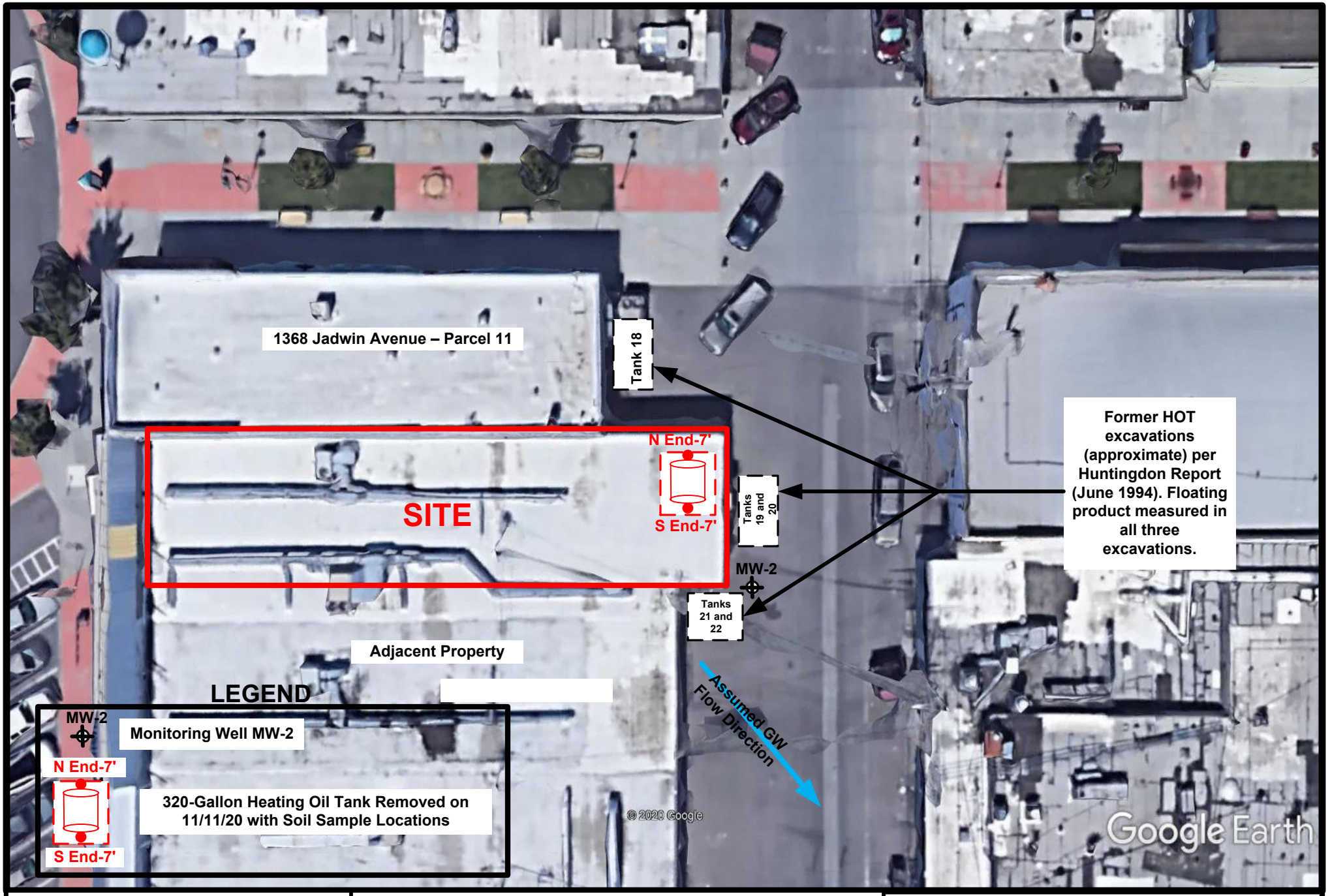
Blue Mountain Environmental & Consulting Company, Inc., ***Underground Storage Tank Investigation Work Plan At Richland Uptown Shopping Center-Parcel 10: 1364 Jadwin Avenue***, Richland, Washington 99354, July 29, 2020.

Google Maps, 2020.

Huntingdon Engineering and Environmental, ***Underground Storage Tank Removal Project, Limited Environmental Site Assessment-Uptown Shopping Center,*** Richland, Washington, June 8, 1994.

Washington State Department of Ecology, ***Model Toxics Control Act Statute and Regulation***, November 2007.

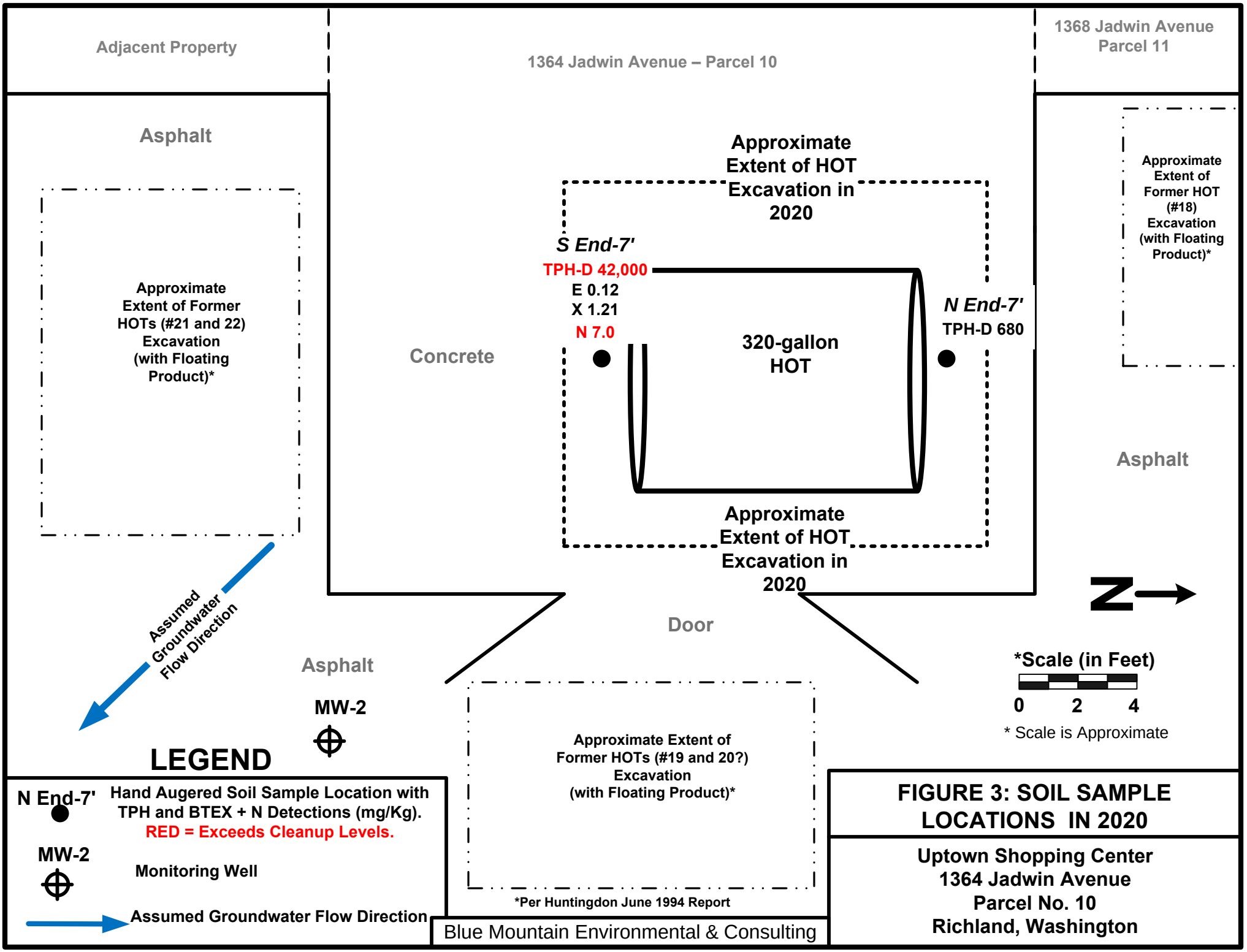
Blue Mountain Environmental & Consulting **Waitsburg, Washington**	**FIGURE 1 – SITE VICINITY MAP**	**UST Investigation** **Richland Shopping Center** **Parcel 10 - 1364 Jadwin Avenue** **Richland, Washington 99354**



WASHINGTON CLEANUP SITE ID#: 11645
FACILITY SITE ID#: 10144

FIGURE 2 – HEATING OIL TANK EXCAVATION LOCATIONS IN 1994 AND 2020

Uptown Shopping Center
1364 Jadwin Avenue
Parcel No. 10
Richland, Washington 99354


Adjacent Property
1364 Jadwin Avenue – Parcel 10
1368 Jadwin Avenue
Parcel 11
Asphalt
Approximate Extent of Former HOTs (#21 and 22) Excavation (with Floating Product)*
Approximate Extent of HOT Excavation in 2020
S End-7'
TPH-D 42,000
E 0.12
X 1.21
N 7.0
N End-7'
TPH-D 680
320-gallon HOT
Concrete
Approximate Extent of HOT Excavation in 2020
Approximate Extent of Former HOT (#18) Excavation (with Floating Product)*
Asphalt
Assumed Groundwater Flow Direction
Door
Asphalt
MW-2
Approximate Extent of Former HOTs (#19 and 20?) Excavation (with Floating Product)*
*Per Huntingdon June 1994 Report
*Scale (in Feet)
0 2 4
* Scale is Approximate
LEGEND
N End-7' Hand Augered Soil Sample Location with TPH and BTEX + N Detections (mg/Kg).
RED = Exceeds Cleanup Levels.
MW-2 Monitoring Well
Assumed Groundwater Flow Direction
Blue Mountain Environmental & Consulting
FIGURE 3: SOIL SAMPLE LOCATIONS IN 2020
Uptown Shopping Center
1364 Jadwin Avenue
Parcel No. 10
Richland, Washington

APPENDIX A

Photographs

Photograph 1 – Soil excavated from heating oil tank (HOT) excavation on November 11, 2020 (facing west).

Photograph 2 – Clarke Construction excavating soil from the HOT located inside the building at Parcel – 1364 Jadwin Avenue on November 19, 2020 (facing NNW).

Photograph 3 – HOT soil excavation close-up on November 11, 2020 (facing NNE).

Photograph 4 – Light, non-aqueous phase liquid (LNAPL) removed from monitoring well MW-2 on November 11, 2020 (facing west).

Photograph 5 – Clarke Construction employee hand digging soil from north end of HOT on November 11, 2020 (facing north).

Photograph 6 – 320-gallon HOT ready for removal from excavation on November 11, 2020 (facing north).

Photograph 7 – Clean HOT interior (facing west).

Photograph 8 – HOT loaded and secured, prior to being recycled as scrap metal on November 11, 2020 (facing west).

Photograph 9 – Bottom of HOT excavation with hand auger boring holes at base of former tank on November 11, 2020 (standing on south end of tank pit facing north).

Photograph 10 – Fill port located on outside of the building did not have the cap on top of it when we arrived onsite on November 10, 2020 (facing SW).

Photograph 11 – Mini-backhoe use to excavate soil and HOT on November 10 and 11, 2020 (facing NW).

Photograph 12 – Pea gravel backfill on November 11, 2020 (facing NW).

APPENDIX B

HOT and Emulsified Oil and Water Disposal Receipt

Orrco™
The oil recycler.

Head Office
4150 N. Suttle Rd.
Portland, OR 97217
1-800-367-8894

RECEIVING RECORD

R 01-20-1112-004

Received From:
Clarke Construction
948 May Ave
Walla Walla WA 99362
EPA#
Phone: 360-719-0140
Customer ID# ***31470***
Driver:

Receiving Location: Plant #
FPI
4150 N. Suttle Road
Portland, OR 97217

Phone 503-286-8352
EPA# ORD980975692

Date	Terms	Written By	Sales Rep.	Page
11/12/20	-0-	Paul		*1* of *1*

Line	Qty.	Unit	Item	%H20	Manifest #	B/L#	Net Qty
1	*1*	*Each*	*XRF Analysis Testing* Generator ID# 31470 Clarke Construction				
			Total Each 1.				
2	*25*	*Gal.*	*Emulsified Oil & Water* Generator ID# 31470 Clarke Construction PROFILE SCANNED AND ATTACHED - CLARK COUNTY CONSTRUCTION 1364 JADWIN AVE RICHLAND , OR				
3	*55*	*Gal.*	*Emulsified Oil & Water* Generator ID# 31470 Clarke Construction PROFILE SCANNED AND ATTACHED - CLARK CONSTRUCTION 83 NEWCOMER ST RICHLAND , OR				
			Total Gal. 80.				

Customer warrents that the waste petroleum products being received do not contain any contaminants including, without limitation, pesticides, chlorinated solvents at total concentrations greater than 1000 PPM, PCB's greater than 2 PPM, or any other material classified as hazardous waste by 40 CFR part 261, Subparts C and D (implementing the Federal Resource Conservation and Recovery Act) or by any other state or local hazardous waste classification program. Should Laboratory tests find this product not in compliance with 40 CFR part 261 customer agrees to pay all disposal costs incurred.

Signed X _____ DATE: 11/12/20

TWIN CITY METALS

455 East Bruneau
P.O. Box 6484
Kennewick, WA 99336
(509) 582-8207

Purchase Receipt

Seller _____ Date Nov 9, 20 22

Street _____ Lic. No./State _____

City _____ State _____ Zip _____ Make/Mdl. _____

SO # _____ Inv. # _____ P.O. # _____

Code	Description	Net Wt.	Price	Amount
	#1 Copper			
	#2 Copper			
110	Insulated Copper Wire			
201	Red Brass			
203	Yellow Brass			
213	Radiators			
301	Aluminum-Cast			
302	Aluminum-Sheet			
	Alum/Copper Rad.			
399	Irony Aluminum			
	Scrap Iron			
	Scrap Tin			
401	Stainless Steel (18/8)			
	Die Cast			
	Total			

TERMS AND CONDITIONS

I have read the current list of materials Twin City Metals will not accept for regulatory and environmental reasons. I warrant that the materials I am selling Twin City Metals do not contain any of the materials described on the list or contain hazardous or toxic wastes for which disposal in a municipal landfill is restricted or prohibited. I warrant that all materials, including tanks, sealed motors and metal borings have been fully and lawfully drained of all oils and oil products. I further warrant that any items that contained ozone depleting compounds, such as CFC's or Freon, have been emptied in accordance with appplicable laws.

I warrant that I am the lawful owner of the materials being sold and that I have the right to sell them to Twin City Metals. I acknowledge that for the payment I received in full, I sell and convey title to the materials to Twin City Metals. I also understand that Twin City Metals is not responsible for accidents to the materials or to vehicles while loading or unloading.

I agree to indemnify and hold harmless Twin City Metals against all claims and expenses arising out of any breach of these warranties.

TIME _____ CHECK NO. _____

WEIGHED BY _____ BY _____

PAYMENT RECEIVED IN FULL

APPENDIX C

Parcel 11 Boring Logs

PROJECT Richland Uptown Shopping Center PROJECT NUMBER E2017-0903

LOCATION 1368 - Parcel 11; BMEC-01 DRILLING DATE 9/25/17

DATUM Ground surface DRILLING METHOD Push Probe

LOGGED BY Brent Bergeron DRILLER Derek Routh - PS&W

DEPTH	SOIL DESCRIPTION	GRAPHIC	MISC
0-0.5'	Asphalt		
0.5-5'	Brown, fine-grained SAND, well-sorted, dry		SP
			SP
			SP
			SP
			SP
5			
5-7'	Brown, fine-grained SAND, well-sorted, dry		SP
			SP
7-8'	Grey, fine-grained SAND, well-sorted, v. moist		SP
	TD = 8'		
10			
15			
20			

▽ @ 7'; moderate petro odor from 7-8'

1250 X BMEC-01-8'

PROJECT Richland Uptown Shopping Center PROJECT NUMBER E2017-0903

LOCATION 1368 - Parcel 11; BMEC-02 DRILLING DATE 9/25/17

DATUM Ground surface DRILLING METHOD Push Probe

LOGGED BY Brent Bergeron DRILLER Derek Rauth - PSaW

DEPTH	SOIL DESCRIPTION	GRAPHIC	MISC
0-0.5'	Asphalt		
0.5-5'	Brown, fine-grained SAND, well-sorted, dry		SP
	↓		SP
			SP
			SP
5			SP
			SP
			SP
	Brown, fine-grained		SP
1320 X BMEC-02-8'	SAND, well-sorted, dry,		SP
	cobble		SP
10	TD = 10'		
15			
20			

PROJECT Richland Uptown Shopping Center PROJECT NUMBER E2017-0903

LOCATION 1368-Parcel 11; BMEC-03 DRILLING DATE 9/25/17

DATUM Ground surface DRILLING METHOD Push Probe

LOGGED BY Brent Bergeron DRILLER Derek Routh - PSW

DEPTH	SOIL DESCRIPTION	GRAPHIC	MISC
0-0.5':	Asphalt		
0.5-5':	Brown, fine-grained SAND, well-sorted, dry		SP
	↓		SP
			SP
			SP
			SP
5			
5-8':	Brown, fine-grained SAND, well-sorted, dry, cobbles ↓		SP
			SP
			SP
1340 X BMEC-03-8'	TD = 8'		
10			
15			
20			

PROJECT Richland Uptown Shopping Center | PROJECT NUMBER E2017-0903

LOCATION 1368 - Parcel 11; BMEC-04 | DRILLING DATE 9/25/17

DATUM Ground surface | DRILLING METHOD Push Probe

LOGGED BY Brent Bergeron | DRILLER Derek Routh - Pacific Soil & Water

DEPTH	SOIL DESCRIPTION	GRAPHIC	MISC
0-0.5':	Asphalt		
0.5-5':	Brown, fine-grained SAND,		SP
	well-sorted, dry		SP
			SP
			SP
			SP
5			
5-8':	Brown, fine-grained		SP
	SAND, well-sorted,		SP
1400 X	trace rounded coarse gravel, dry		SP
BMEC-04-8'	8-10': Brown, fine-grained		SP
	SAND, trace gravel, V. moist		SP
10			
10-12':	SAA		SP
12-13':	Gray, fine-grained		SP
	SAND, mpo, little gravel, wet		SP
1420 X			
BMEC-04-13'	13-14': Gray, sandy GRAVEL, wet		GW
14-15':	Gray, fine SAND, mpo, little gravel, wet		SP
15	TD = 15'		
20			

▽ @ 8'

DTW @ 10.8' bgs 1425

Mild petro odor @ 12-15'

APPENDIX D

Laboratory Analytical Reports and Accompanying Chain-of-Custody Documentation

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

November 19, 2020

Peter Trabusiner
Blue Mountain Environmental, Inc.
1500 Adair Drive
Richland, WA 99352

Re: Analytical Data for Project E2020/0605; Uptown Parcel 10
Laboratory Reference No. 2011-169

Dear Peter:

Enclosed are the analytical results and associated quality control data for samples submitted on November 16, 2020.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: November 19, 2020
Samples Submitted: November 16, 2020
Laboratory Reference: 2011-169
Project: E2020/0605; Uptown Parcel 10

Case Narrative

Samples were collected on November 11, 2020 and received by the laboratory on November 16, 2020. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: November 19, 2020
Samples Submitted: November 16, 2020
Laboratory Reference: 2011-169
Project: E2020/0605; Uptown Parcel 10

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**11645-01-N7'**					
Laboratory ID:	11-169-01					
Diesel Fuel #2	**680**	28	NWTPH-Dx	11-17-20	11-17-20	
Lube Oil Range Organics	**ND**	78	NWTPH-Dx	11-17-20	11-17-20	U1
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				
Client ID:	**11645-02-S7'**					
Laboratory ID:	11-169-02					
Diesel Fuel #2	**42000**	300	NWTPH-Dx	11-17-20	11-18-20	
Lube Oil Range Organics	**ND**	1100	NWTPH-Dx	11-17-20	11-18-20	U1
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*---*	*50-150*				S

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DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	11-17-20	11-17-20	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	11-169-02									
	ORIG	DUP								
Diesel Fuel #2	**35500**	**34000**	NA	NA		NA	NA	4	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	U1
Surrogate:										
o-Terphenyl						--- ---	*50-150*			S,S

Date of Report: November 19, 2020
Samples Submitted: November 16, 2020
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Project: E2020/0605; Uptown Parcel 10

VOLATILE ORGANICS EPA 8260D
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**11645-01-N7'**					
Laboratory ID:	11-169-01					
Dichlorodifluoromethane	ND	0.0016	EPA 8260D	11-17-20	11-17-20	
Chloromethane	ND	0.0058	EPA 8260D	11-17-20	11-17-20	
Vinyl Chloride	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Bromomethane	ND	0.0058	EPA 8260D	11-17-20	11-17-20	
Chloroethane	ND	0.0058	EPA 8260D	11-17-20	11-17-20	
Trichlorofluoromethane	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
1,1-Dichloroethene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Acetone	0.053	0.012	EPA 8260D	11-17-20	11-17-20	
Iodomethane	ND	0.0058	EPA 8260D	11-17-20	11-17-20	
Carbon Disulfide	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Methylene Chloride	ND	0.0058	EPA 8260D	11-17-20	11-17-20	
(trans) 1,2-Dichloroethene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Methyl t-Butyl Ether	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
1,1-Dichloroethane	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Vinyl Acetate	ND	0.0058	EPA 8260D	11-17-20	11-17-20	
2,2-Dichloropropane	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
(cis) 1,2-Dichloroethene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
2-Butanone	ND	0.0058	EPA 8260D	11-17-20	11-17-20	
Bromochloromethane	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Chloroform	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
1,1,1-Trichloroethane	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Carbon Tetrachloride	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
1,1-Dichloropropene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Benzene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
1,2-Dichloroethane	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Trichloroethene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
1,2-Dichloropropane	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Dibromomethane	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Bromodichloromethane	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
2-Chloroethyl Vinyl Ether	ND	0.0058	EPA 8260D	11-17-20	11-17-20	
(cis) 1,3-Dichloropropene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Methyl Isobutyl Ketone	ND	0.0058	EPA 8260D	11-17-20	11-17-20	
Toluene	ND	0.0058	EPA 8260D	11-17-20	11-17-20	
(trans) 1,3-Dichloropropene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	

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VOLATILE ORGANICS EPA 8260D
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**11645-01-N7'**					
Laboratory ID:	11-169-01					
1,1,2-Trichloroethane	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Tetrachloroethene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
1,3-Dichloropropane	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
2-Hexanone	ND	0.0058	EPA 8260D	11-17-20	11-17-20	
Dibromochloromethane	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
1,2-Dibromoethane	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Chlorobenzene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
1,1,1,2-Tetrachloroethane	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Ethylbenzene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
m,p-Xylene	ND	0.0023	EPA 8260D	11-17-20	11-17-20	
o-Xylene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Styrene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Bromoform	ND	0.0058	EPA 8260D	11-17-20	11-17-20	
Isopropylbenzene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Bromobenzene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
1,1,2,2-Tetrachloroethane	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
1,2,3-Trichloropropane	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
n-Propylbenzene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
2-Chlorotoluene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
4-Chlorotoluene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
1,3,5-Trimethylbenzene	0.0092	0.0056	EPA 8260D	11-17-20	11-17-20	
tert-Butylbenzene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
1,2,4-Trimethylbenzene	0.020	0.0056	EPA 8260D	11-17-20	11-17-20	
sec-Butylbenzene	0.0030	0.0012	EPA 8260D	11-17-20	11-17-20	
1,3-Dichlorobenzene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
p-Isopropyltoluene	0.0065	0.0012	EPA 8260D	11-17-20	11-17-20	
1,4-Dichlorobenzene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
1,2-Dichlorobenzene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
n-Butylbenzene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
1,2-Dibromo-3-chloropropane	ND	0.0058	EPA 8260D	11-17-20	11-17-20	
1,2,4-Trichlorobenzene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Hexachlorobutadiene	ND	0.0058	EPA 8260D	11-17-20	11-17-20	
Naphthalene	ND	0.028	EPA 8260D	11-17-20	11-17-20	
1,2,3-Trichlorobenzene	ND	0.0012	EPA 8260D	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*100*	*74-131*				
Toluene-d8	*101*	*78-128*				
4-Bromofluorobenzene	*95*	*71-130*				

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VOLATILE ORGANICS EPA 8260D
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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**11645-02-S7'**					
Laboratory ID:	11-169-02					
Dichlorodifluoromethane	ND	0.0084	EPA 8260D	11-17-20	11-17-20	
Chloromethane	ND	0.030	EPA 8260D	11-17-20	11-17-20	
Vinyl Chloride	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
Bromomethane	ND	0.030	EPA 8260D	11-17-20	11-17-20	
Chloroethane	ND	0.030	EPA 8260D	11-17-20	11-17-20	
Trichlorofluoromethane	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
1,1-Dichloroethene	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
Acetone	0.39	0.060	EPA 8260D	11-17-20	11-17-20	
Iodomethane	ND	0.030	EPA 8260D	11-17-20	11-17-20	
Carbon Disulfide	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
Methylene Chloride	ND	0.030	EPA 8260D	11-17-20	11-17-20	
(trans) 1,2-Dichloroethene	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
Methyl t-Butyl Ether	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
1,1-Dichloroethane	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
Vinyl Acetate	ND	0.030	EPA 8260D	11-17-20	11-17-20	
2,2-Dichloropropane	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
(cis) 1,2-Dichloroethene	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
2-Butanone	ND	0.030	EPA 8260D	11-17-20	11-17-20	
Bromochloromethane	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
Chloroform	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
1,1,1-Trichloroethane	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
Carbon Tetrachloride	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
1,1-Dichloropropene	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
Benzene	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
1,2-Dichloroethane	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
Trichloroethene	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
1,2-Dichloropropane	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
Dibromomethane	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
Bromodichloromethane	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
2-Chloroethyl Vinyl Ether	ND	0.030	EPA 8260D	11-17-20	11-17-20	
(cis) 1,3-Dichloropropene	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
Methyl Isobutyl Ketone	ND	0.030	EPA 8260D	11-17-20	11-17-20	
Toluene	ND	0.030	EPA 8260D	11-17-20	11-17-20	
(trans) 1,3-Dichloropropene	ND	0.0060	EPA 8260D	11-17-20	11-17-20	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**11645-02-S7'**					
Laboratory ID:	11-169-02					
1,1,2-Trichloroethane	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
Tetrachloroethene	0.024	0.0060	EPA 8260D	11-17-20	11-17-20	
1,3-Dichloropropane	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
2-Hexanone	ND	0.030	EPA 8260D	11-17-20	11-17-20	
Dibromochloromethane	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
1,2-Dibromoethane	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
Chlorobenzene	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
1,1,1,2-Tetrachloroethane	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
Ethylbenzene	0.12	0.0060	EPA 8260D	11-17-20	11-17-20	
m,p-Xylene	0.88	0.012	EPA 8260D	11-17-20	11-17-20	
o-Xylene	0.33	0.0060	EPA 8260D	11-17-20	11-17-20	
Styrene	ND	0.0060	EPA 8260D	11-17-20	11-17-20	
Bromoform	ND	0.030	EPA 8260D	11-17-20	11-17-20	
Isopropylbenzene	0.091	0.0060	EPA 8260D	11-17-20	11-17-20	
Bromobenzene	ND	0.16	EPA 8260D	11-17-20	11-17-20	
1,1,2,2-Tetrachloroethane	ND	0.16	EPA 8260D	11-17-20	11-17-20	
1,2,3-Trichloropropane	ND	0.16	EPA 8260D	11-17-20	11-17-20	
n-Propylbenzene	0.19	0.16	EPA 8260D	11-17-20	11-17-20	
2-Chlorotoluene	ND	0.16	EPA 8260D	11-17-20	11-17-20	
4-Chlorotoluene	ND	0.16	EPA 8260D	11-17-20	11-17-20	
1,3,5-Trimethylbenzene	1.4	0.16	EPA 8260D	11-17-20	11-17-20	
tert-Butylbenzene	ND	0.16	EPA 8260D	11-17-20	11-17-20	
1,2,4-Trimethylbenzene	3.4	0.16	EPA 8260D	11-17-20	11-17-20	
sec-Butylbenzene	0.29	0.16	EPA 8260D	11-17-20	11-17-20	
1,3-Dichlorobenzene	ND	0.16	EPA 8260D	11-17-20	11-17-20	
p-Isopropyltoluene	0.40	0.16	EPA 8260D	11-17-20	11-17-20	
1,4-Dichlorobenzene	ND	0.16	EPA 8260D	11-17-20	11-17-20	
1,2-Dichlorobenzene	ND	0.16	EPA 8260D	11-17-20	11-17-20	
n-Butylbenzene	ND	0.16	EPA 8260D	11-17-20	11-17-20	
1,2-Dibromo-3-chloropropane	ND	0.81	EPA 8260D	11-17-20	11-17-20	
1,2,4-Trichlorobenzene	ND	0.16	EPA 8260D	11-17-20	11-17-20	
Hexachlorobutadiene	ND	0.81	EPA 8260D	11-17-20	11-17-20	
Naphthalene	7.0	0.81	EPA 8260D	11-17-20	11-17-20	
1,2,3-Trichlorobenzene	ND	0.16	EPA 8260D	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*107*	*74-131*				
Toluene-d8	*109*	*78-128*				
4-Bromofluorobenzene	*107*	*71-130*				

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VOLATILE ORGANICS EPA 8260D
QUALITY CONTROL
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117S1					
Dichlorodifluoromethane	ND	0.0014	EPA 8260D	11-17-20	11-17-20	
Chloromethane	ND	0.0050	EPA 8260D	11-17-20	11-17-20	
Vinyl Chloride	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Bromomethane	ND	0.0050	EPA 8260D	11-17-20	11-17-20	
Chloroethane	ND	0.0050	EPA 8260D	11-17-20	11-17-20	
Trichlorofluoromethane	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,1-Dichloroethene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Acetone	ND	0.010	EPA 8260D	11-17-20	11-17-20	
Iodomethane	ND	0.0050	EPA 8260D	11-17-20	11-17-20	
Carbon Disulfide	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Methylene Chloride	ND	0.0050	EPA 8260D	11-17-20	11-17-20	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,1-Dichloroethane	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Vinyl Acetate	ND	0.0050	EPA 8260D	11-17-20	11-17-20	
2,2-Dichloropropane	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
2-Butanone	ND	0.0050	EPA 8260D	11-17-20	11-17-20	
Bromochloromethane	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Chloroform	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Carbon Tetrachloride	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,1-Dichloropropene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Benzene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,2-Dichloroethane	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Trichloroethene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,2-Dichloropropane	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Dibromomethane	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Bromodichloromethane	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260D	11-17-20	11-17-20	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260D	11-17-20	11-17-20	
Toluene	ND	0.0050	EPA 8260D	11-17-20	11-17-20	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	

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Samples Submitted: November 16, 2020
Laboratory Reference: 2011-169
Project: E2020/0605; Uptown Parcel 10

VOLATILE ORGANICS EPA 8260D
QUALITY CONTROL
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Tetrachloroethene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,3-Dichloropropane	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
2-Hexanone	ND	0.0050	EPA 8260D	11-17-20	11-17-20	
Dibromochloromethane	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,2-Dibromoethane	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Chlorobenzene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Ethylbenzene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
m,p-Xylene	ND	0.0020	EPA 8260D	11-17-20	11-17-20	
o-Xylene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Styrene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Bromoform	ND	0.0050	EPA 8260D	11-17-20	11-17-20	
Isopropylbenzene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Bromobenzene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
n-Propylbenzene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
2-Chlorotoluene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
4-Chlorotoluene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
tert-Butylbenzene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
sec-Butylbenzene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
p-Isopropyltoluene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
n-Butylbenzene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260D	11-17-20	11-17-20	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Hexachlorobutadiene	ND	0.0050	EPA 8260D	11-17-20	11-17-20	
Naphthalene	ND	0.0050	EPA 8260D	11-17-20	11-17-20	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260D	11-17-20	11-17-20	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*106*	*74-131*				
Toluene-d8	*102*	*78-128*				
4-Bromofluorobenzene	*99*	*71-130*				

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VOLATILE ORGANICS EPA 8260D
QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1117S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0522**	**0.0543**	0.0500	0.0500	104	109	55-126	4	17	
Benzene	**0.0542**	**0.0578**	0.0500	0.0500	108	116	65-121	6	16	
Trichloroethene	**0.0541**	**0.0588**	0.0500	0.0500	108	118	74-126	8	16	
Toluene	**0.0536**	**0.0581**	0.0500	0.0500	107	116	71-121	8	16	
Chlorobenzene	**0.0483**	**0.0537**	0.0500	0.0500	97	107	72-123	11	16	
Surrogate:										
Dibromofluoromethane					*98*	*98*	*74-131*			
Toluene-d8					*101*	*102*	*78-128*			
4-Bromofluorobenzene					*102*	*95*	*71-130*			

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% MOISTURE

Client ID	Lab ID	% Moisture	Date Analyzed
11645-01-N7'	11-169-01	**12**	11-17-20
11645-02-S7'	11-169-02	**15**	11-17-20

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: BHEC
Project Number: E2020/0605
Project Name: UPTOWN PARCEL 10
Project Manager: P. TRABUSINER
Sampled by: BRENT BERGEROH

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☒ 3 Day
- ☐ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 11-169

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	% Moisture
1	11645-01-N7'	11/11/20	11:00	Soil	3			X	X										X
2	11645-02-S7'	11/11/20	11:10	Soil	3			X	X										X

	Signature	Company	Date	Time
Relinquished by		BHEC	11/12/20	10:00
Received by		OSE	11/16/20	1030
Relinquished by				
Received by				
Relinquished by				
Received by				

Comments/Special Instructions:

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

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