

Independent Soil Remediation
Smudge Pot Storage Area

Ranch 19 East
441 Williamson Road
Sunnyside, Washington

Project Number: 192902.15

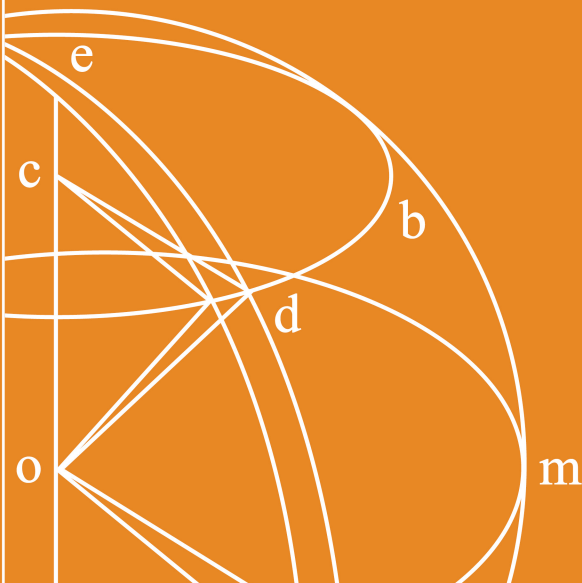
January 5, 2021

Prepared for:

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Report Title: Independent Soil Remediation, Smudge Pot Storage Area

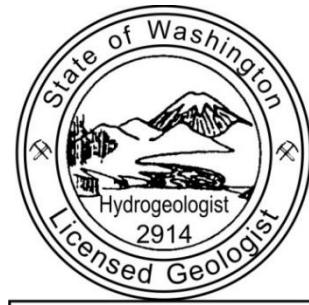
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Site: Ranch 19 East
441 Williamson Road, Sunnyside, Washington
GPS coordinates: 46°24'11.19"N, 120° 0'0.49"W

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Report Integrity:

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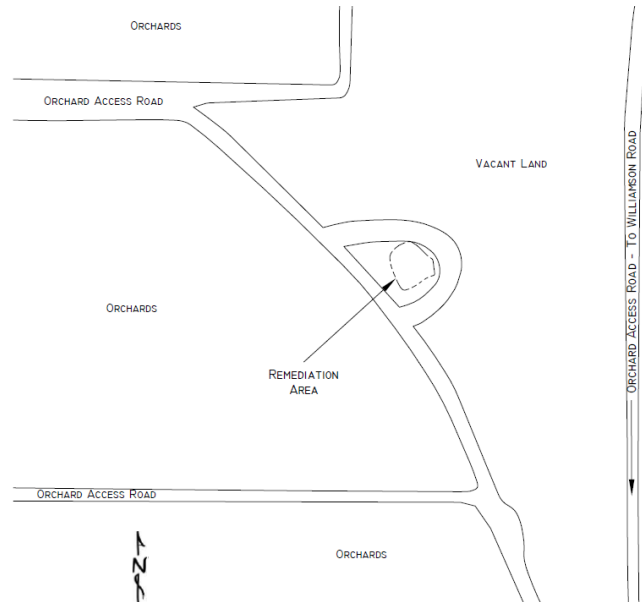
Appendix F TEE Form



1.0 Introduction

Fulcrum Environmental Consulting, Inc. (Fulcrum) was retained by WA LAND MGMT, LLC to complete site characterization and remediation of one area of suspected petroleum contaminated soil (PCS) associated with historical smudge pot storage. See Figure 1 for the site location.

Ranch 19 is located at 441 Williamson Road in Sunnyside, Washington. The former smudge pot area is located at coordinates 46°24'11.19"N, 120° 0'0.49"W in Township 11N, Range 22E, Section 36, Yakima County, Washington. The former smudge pot storage area is located north of Washout Road in the northeast portion of the ranch. A second area of PCS associated with smudge pot storage is located in the western portion of the ranch just north of Williamson Road and is reported under separate cover. The site addressed in this report is referred to as Ranch 19 East. The site and surrounding area land-use consists of arable land, typically utilized as orchards or other crop use.



General Site Location – See Figure 2

During a Phase I Environmental Site Assessment (ESA) site walk performed on behalf of a prospective buyer, visibly stained soils were observed in the smudge pot storage area. The prospective buyer notified WA LAND MGMT, LLC and requested additional investigation and remediation if necessary.

Fulcrum completed limited Phase II investigation activities at the site to evaluate constituents of concern and to approximate extents of impact and soil volumes. The investigation identified localized diesel fuel contamination at the site. The site was reported to the Washington State Department of Ecology (Ecology) on December 19, 2019 under the letter *Release Reporting at a Former Smudge Pot Storage Area – Ranch 19 East, 441 Williamson Road, Sunnyside, Washington*. Site remediation of the identified PCS occurred on October 22 to October 28, 2020.

See Section 5.0 for a summary of the site activities. See Figure 2 for the former smudge pot storage location. See Figure 3 for sampling locations.

All investigation and remediation activities were completed as provided in The Model Toxics Control Act (MTCa), Washington Administrative Code (WAC) 173-340. In our professional opinion, the use of the independent remediation process is appropriate.



2.0 Scope of Work

Fulcrum's scope of services consisted of the following tasks:

- Complete initial investigation and waste characterization sampling of suspect contaminated soils.
- Complete waste characterization evaluation and request for offsite treatment or disposal.
- Direct excavation of petroleum contaminated soils.
- Collect confirmatory samples at the excavation extents for identified contaminants of concern.
- Prepare documentation of remedial activities.

Investigation and remedial activities were limited to the area of impact by the former smudge pot storage releases and were guided through the use of field screening including color, odor, sheet, and head space volatile organic compounds (VOCs) evaluated through a photoionization detector (PID). Investigation and remediation activities were supervised by Nicole McPhee, a staff geologist with Fulcrum. Work was performed under the direction of Jeremy Lynn, Washington State Licensed Hydrogeologist, with Fulcrum. See Appendix A for Professional certification.

Excavation of test pits completed during initial investigation and waste characterization activities were completed by WA LAND MGMT, LLC. Subsequent remedial excavation of PCS was completed by Spokane Environmental Services (SES) under contract to Fulcrum. Fulcrum utilized Fremont Analytical, Inc. (Fremont), of Seattle, Washington to provide laboratory services. Fremont is an Ecology accredited laboratory (accreditation number C910).

The following project partners were retained by WA LAND MGMT, LLC:

- DTG Recycle (formerly Anderson Rock & Demolition Pit and Treatment Facility) of Yakima, Washington to provide transport and treatment of PCS
- Tri-Valley Construction to transport soils to the selected disposal facility.
- DR Trucking Services, LLC to transport soils to the selected disposal facility.
- SD Construction to transport soils to the selected disposal facility.

No groundwater or surface water were encountered during remediation.

3.0 Discussion of Pertinent Regulations and Guidance

Fulcrum utilized applicable portions of the following guidance and Washington State regulations.

3.1 MTCA Regulations

In March of 1989, The Model Toxics Control Act (MTCA) went into effect in Washington State. The MTCA regulations, WAC 173-340-360, set standards to ensure quality of cleanup and protection of human health and the environment. A major portion of the MTCA regulation (completed in 1991) was the development of numerical cleanup standards and requirements for cleanup actions. Three options were established under



MTCA for site-specific cleanup levels: Method A, B, and C. Method A defines cleanup levels for 25 of the most common hazardous substances found at sites. Method B levels are set using a site risk assessment, which enables consideration of site-specific characteristics. Method C is similar to Method B; however, the individual substance's cancer risk portion of the assessment is set at 1 in 100,000 rather than 1 in 1,000,000.

Rule amendments to MTCA, which became effective August 15, 2001, changed the cleanup levels of petroleum hydrocarbon contamination. Whereas diesel and heavy oil concentrations were increased, the MTCA Method A cleanup levels for gasoline and gasoline components Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) were lowered significantly. Updates since 2001 have been primarily administrative in nature, although review and adjustment of cleanup levels are ongoing.

3.2 Cleanup Standard Selected

Ecology's MTCA Method A cleanup tables were developed to provide conservative cleanup levels for sites undergoing routine cleanup actions or those sites with relatively few hazardous substances. Method A cleanup levels are specifically designated as appropriate for residential facilities and are appropriate for a conservative approach at schools and public sites. Therefore, Fulcrum has determined that Ecology's MTCA Method A cleanup levels to be the most appropriate regulatory guidance for evaluating the need for site cleanup at the site. Where Method A cleanup levels are not published, Fulcrum utilized default published Method B values.

3.3 Sampling Guidance Criteria

Fulcrum has utilized applicable portions of the following documents as guidance criteria for confirmation sampling protocol:

1. Washington State Department of Ecology, *Guidance for Remediation of Petroleum Contaminated Soil*, revised June 2016.
2. American Petroleum Institute, *A Guide to the Assessment and Remediation of Underground Petroleum Releases*, publication 1628, dated July 1996.
3. Washington State Department of Ecology, *Guidance for Site Checks and Site Assessments for Underground Storage Tanks*, revised April 2003.

4.0 Environmental Setting

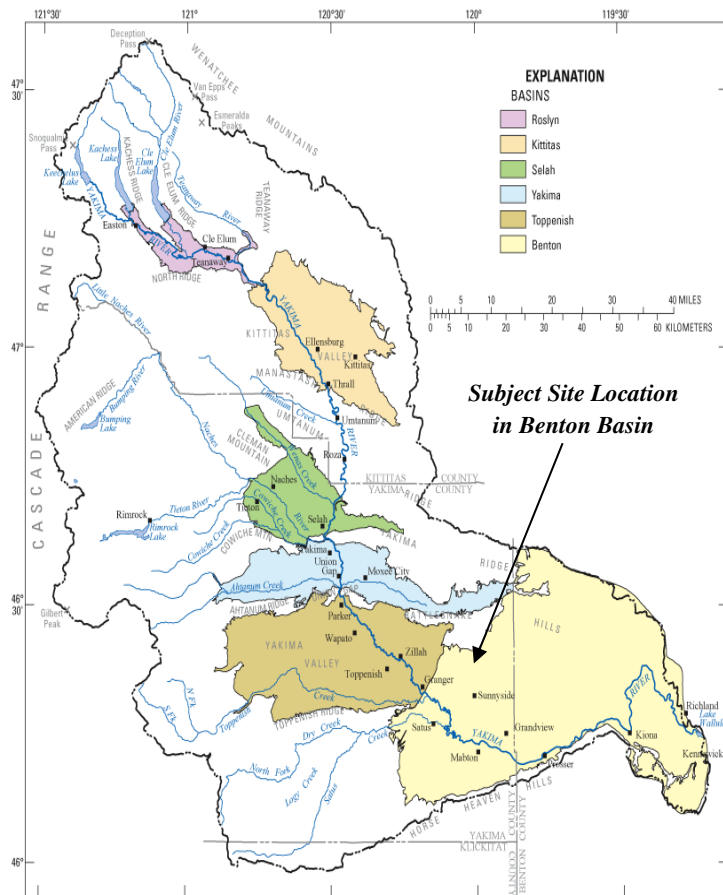
Contaminant transport within the subsurface and extent of impact is largely determined by the nature of the contaminant, as well as, regional and local geologic and hydrogeologic conditions. The following subsections describe regional and local subsurface site settings.



4.1 Regional Setting

From a regional setting, the subject site is located within the Yakima Folds Geomorphic Province (YFGP) on the western margin of the Columbia River Plateau. The Yakima Fold Belt is generally characterized by anticlinal ridge and synclinal valley structures; and valley lowlands are composed of erosional sedimentary deposits including: alluvium, lacustrine, glacial, and glacial-fluvial materials with localized areas of windblown loess. The Yakima River is located to the northeast.

The Yakima River Basin (YRB) is located within the boundaries of the YFGP and extends from the northeastern slopes of the Cascade Mountain Range in Kittitas County to the confluence of the Yakima and Columbia Rivers in Benton County. The YRB additionally incorporates portions of Benton County and the majority of Yakima County. The YRB consists of a total of six structural aquifer basins and occupies 6,200 square miles. The network of Yakima Basin aquifers is supplied by the headwaters of the eastern slopes of the Cascade Mountain Range.



Six Structural Aquifer Basins - Courtesy of USGS

The Subject Site is located within the Benton Basin. The Benton Basin comprises approximately 1,020-square miles in the southeast portion of the YRB and is bordered by the Rattlesnake Hills to the north and east, the Horse Haven Hills to the south, and the City of Granger and the Toppenish Basin to the west. The east extent is defined as the Columbia River. The basin is characterized by folds and faults striking in an east-west direction. The basin fill deposit stratigraphy is divided into two hydrogeologic subunits. The first unit consists of unconsolidated alluvial fan, loess, terrace, dune sand, Touchet, Missoula flood, and Ringold Formation sedimentary deposits with a thickness range of 0 to 870-feet. The second unit consists primarily of consolidated Ellensburg Formation and similar continental sedimentary deposits present in the southwestern portion of the basin and ranges in thickness from 0 to 680-feet. The Benton Basin ranges in total thickness from 0 to 870-feet with the greatest thickness present in the western and northeastern portions of the basin.



4.2 Local Geologic Setting

Site soils are identified by the U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey at the smudge pot storage area as *Scoon silt loam*. According to the USDA Soil Survey, *Scoon silt loam* is well drained with a very low to moderately low capacity to transmit water.

Typical soil profile of *Scoon silt loam* consists of the following:

- *Silt loam* – 0 to 6 inches below ground surface (bgs);
- *Gravelly very fine sandy loam* – 6 to 16 inches bgs;
- *Cemented material* – 16 to 60 inches bgs;

While completing site activities, Fulcrum observed soil within the excavation pit at the smudge pot area to be composed of poorly graded sandy loam with gravel.

Groundwater was not encountered during remediation activities. Shallow groundwater wells are not generally present within the vicinity of the subject site. Fulcrum viewed Ecology's well viewer database within the same township and the range of well depths were from 8 feet to 633 feet bgs. Projected depths to groundwater are unknown at the smudge pot location; however, is estimated to be greater than 40 feet bgs.

5.0 Site Activities

Site activities consisted of an initial investigation for waste characterization followed by remediation.

5.1 Initial Investigation and Waste Characterization

In September 2019, initial investigation and waste characterization activities were completed to evaluate the approximate vertical and horizontal extents of impact and to determine a potential treatment or disposal facility for remedial planning purposes. Fulcrum met with WA LAND MGMT, LLC and completed select test pits through the former smudge pot area. Fulcrum completed visual observation and field screening to evaluate general extents of impact in each test pit. Field screening included evaluation of odor, color, sheen, and VOCs with the use of a PID. At each location, Fulcrum collected one composite sample of near surface and representative soils to evaluate the level of petroleum impact. See Appendix C for site photographs.

The former smudge pot storage area was estimated, based on the presence of surface staining, to be approximately 85 feet north to south and 100 feet east to west. The storage area was located immediately northeast of an orchard access roadway extending from Washout Road.

Three soil samples were collected from areas of where petroleum impacts appeared to be the greatest. Samples included:



- R19E-91619-01: Northern portion of Smudge Pot Storage Area, Surface to 1-foot bgs
- R19E-91619-02: Central portion of Smudge Pot Storage Area, Surface to 1-foot bgs
- R19E-91619-03: Southern portion of Smudge Pot Storage Area, Surface to 1-foot bgs

Each sample was collected into one, 4-ounce borosilicate jar with Teflon lined lids and two, 40-milliliter glass vials with Teflon lined lids. New, clean nitrile gloves were used during sampling. See Appendix B for a summary of Fulcrum's sample handling methodology. The soil samples were packaged on ice and shipped overnight via commercial carrier under chain-of-custody to Fremont for analysis.

Samples were composited in the laboratory for waste characterization. Samples were submitted for the following analyses:

- Polychlorinated Biphenyls (PCBs) by Environmental Protection Agency (EPA) Method 8082
- Diesel and heavy Oil by Northwest Total Petroleum Hydrocarbons (NWTPH) – Diesel Extended (Dx Ext)
- Polyaromatic Hydrocarbons (PAH) by EPA Method 8270 (SIM)
- Volatile Organic Compounds by EPA Method 8260D
- Mercury by EPA Method 7471
- Total Arsenic, Cadmium, Chromium and Lead by EPA Method 6020B.

Results were reported under Fremont work order number 1909309. See Appendix E for Complete Laboratory Report.

Table 1: Waste Characterization Sample Results

Analyte	Result (mg/Kg)	MTCA Method A CUL	Exceeds MTCA Method A CUL	Dangerous Waste Level (mg/L)	Exceeds Dangerous Waste Level
Total PCBs ¹	<0.101	10 ²	No	-	-
Diesel	86,000	2,000	Yes	-	-
Heavy Oil	<503	2,000	No	-	-
<i>Polyaromatic Hydrocarbons</i>					
Benzo[a]pyrene	<0.402	0.1 ²	Yes	-	-
Benz[a]anthracene	0.234	NA	NA	-	-
Benzo[b]fluoranthene	0.356	NA	NA	-	-
Benzo[k]fluoranthene	0.292	NA	NA	-	-
Chrysene	0.762	NA	NA	-	-
Dibenz[a,h]anthracene	0.076	NA	NA	-	-
Indeno[1,2,3-cd]pyrene	0.225	NA	NA	-	-
<i>PAH TTEC (Per WAC 173-340-708)</i>	0.1259	0.1²	Yes	-	-
Pyrene	8.19	2,400	No	-	-
Benzo[g,h,i]perylene	0.177	NA	NA	-	-
<i>Total PAH [Percentage Per WAC 173-303-100(6)]</i>	0.107%	-	-	1%	No
<i>Semi-Volatile Organic Compounds</i>					
Naphthalene	0.081	5	No	-	-
2-Methylnaphthalene	0.148	320 ³	No	-	-



Analyte	Result (mg/Kg)	MTCA Method A CUL	Exceeds MTCA Method A CUL	Dangerous Waste Level (mg/L)	Exceeds Dangerous Waste Level
1-Methynaphthalene	0.091	340 ³	No	-	-
<i>Volatile Organic Compounds</i>					
Halogenated/Chlorinated VOCs ¹	-	-	-	-	-
Benzene	<0.020	0.03	No	0.5	No
Toluene	0.027	7	No	-	-
Ethylbenzene	<0.025	6	No	-	-
Total Xylenes	0.064	9	No	-	-
1,2,4-Trimethylbenzene	0.040	800 ³	No	-	-
<i>Metals</i>					
Mercury	<0.245	2	No	0.2	No
Arsenic	3.07	20	No	5	No
Cadmium	0.281	2	No	1	No
Total Chromium	10.3	19 / 2,000 ⁴	No	5	No
Lead	8.63	250	No	5	No

All results, method reporting limits, and cleanup levels are presented in mg/Kg. Dangerous waste threshold values where published in WAC 173-303-090(8) are presented in milligrams per liter.

Results in **Bold** indicate a result above the MTCA Method cleanup level.

¹ The individual chemical constituents were not detected above the method reporting limit (MRL)

² The Unrestricted MTCA Method A cleanup level for Benzo[a]pyrene was used for waste characterization.

³ Select constituents have established MTCA Method A cleanup level. When a MTCA Method A cleanup level is not available, the MTCA Method B Standard Value is utilized for evaluation.

⁴ The MTCA Method A cleanup level for Chromium (III) is 2,000 mg/Kg and for Chromium (VI) is 19 mg/Kg

The following data qualifiers were noted in the laboratory results for the project samples:

- D Dilution was required for diesel
- S Spike recovery outside accepted recovery limits for petroleum surrogates
- J Analyte detected below Reporting Limit for select PAHs
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% Drift or minimum RRF) for select VOCs

Dilution, spike recovery, and calibration drift are commonly associated with high levels of petroleum hydrocarbons. An analyte reported below the reporting limit is typically found where analytical sensitivity exceeds the method reporting requirements. A review of these notes indicates that laboratory QA/QC are satisfactory and should not affect project data or objectives.

The initial investigation confirmed the presence of diesel range petroleum hydrocarbons as the contaminants of concern for remediation.

The selected MTCA Method A threshold for PAHs was industrial land use as the treatment facility is an industrial site. PAHs are typically associated with diesel product and are expected to be remediated to below unrestricted land use threshold concentrations at the site with removal of the diesel impacted soil. However, based on discussions with Ecology associated with concurrent smudge pot remediation sites, screening for PAHs is appropriate for final site confirmation samples based on the waste characterization results.



5.2 Remedial Excavation

Remedial excavation of PCS began on October 22, 2020 and was completed on October 28, 2020. Soils were excavated utilizing an excavator and loaded directly into dump trucks for transport to the treatment facility.

Fulcrum utilized field screening methods, including visual observation for staining or discoloration, sheen on water, and use of a PID, to guide the excavation. When visibly impacted soils were removed and field indications of contamination were absent, soil samples were collected to confirm completion of remediation.

Fulcrum completed field screening of all soil samples as shown in Tables 2 and 3. Laboratory results are provided in Section 6.0, Table 4.

Table 2: Field Screening – October 22, 26, 27, and 28, 2020

Sample ID	Color	Odor	PID (ppm)	Sheen	Other
1	Light Brown	No	0	No	Sandy silt loam with gravel and cobbles
2	Light Brown	Slight	1	No	Sandy silt loam with gravel and cobbles
3	Light Brown	Slight	0	No	Sandy silt loam with gravel and cobbles
4	Light Brown	No	0	No	Sandy silt loam with gravel and cobbles
5	Light Brown	No	0	No	Sandy silt loam with gravel and cobbles
6	Light Brown	No	0	No	Sandy silt loam with gravel and cobbles
7	Light Brown	No	0	No	Sandy silt loam with gravel and cobbles
8	Light Brown	No	0	No	Sandy silt loam with gravel and cobbles
9	Light Brown	Slight	1	No	Sandy silt loam with gravel and cobbles
10	Light Brown	No	0	No	Sandy silt loam with gravel and cobbles
11	Light Brown	No	0	No	Sandy silt loam with gravel and cobbles
12	Light Brown	Slight	0	No	Sandy silt loam with gravel and cobbles
13	Light Brown	No	0	No	Sandy silt loam with gravel and cobbles

ppm Parts Per Million in air

The former smudge pot staging area was excavated to a footprint approximately 94 feet in length (north-south), 103 feet wide (east-west), and ranging from 1 to 8 feet in depth with an average of about 1 to 2 feet deep. The central portion of the excavation was completed to approximately 3 to 8 feet bgs in localized areas.

Based on total area and linear extents of sidewalls exceeding 3 feet bgs, a total of nineteen (19) samples were collected and included fourteen (14) from pit bottom and five (5) from excavation sidewalls.

Soil samples were collected by hand where possible, and from the excavator bucket where indicated. Soil samples were placed within a 4-ounce borosilicate jars with Teflon-lined lid (Diesel, Heavy Oil, and PAHs) and two 40 milliliter glass vials (for BTEX analysis) with a Teflon-lined lid for each sample location. New, clean nitrile gloves were used for each sample set.



6.0 Laboratory Results

The samples were packed on ice and shipped overnight via commercial carrier under chain-of-custody to Fremont for analysis by the following:

- Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
- Volatile Organic Compounds (VOC) for Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) by Environmental Protection Agency (EPA) Method 8260D

Based on feedback from Ecology on concurrent smudge-pot remediation sites and as a screening approach, additional analysis for the following was completed for one sample (R19E-102820-13.1):

- Polycyclic Aromatic Hydrocarbons (PAH) by EPA Method 8270 (SIM)

Results were reported under Fremont Project No. 2010457 and 2010479 and are summarized in Table 4. See Appendix E for Complete Laboratory Results.

Table 3: Former Smudge Pot Storage Area Laboratory Results

Sample ID and Location	Analyte					
	Diesel	Heavy Oil	Benzene	Toluene	Ethylbenzene	Total Xylenes
<i>Initial Event – December 12, 2019</i>						
R19E-102720-01.2 Southeast pit bottom, 2 feet bgs	<18.7	<46.8	<0.0247	<0.0247	<0.0309	<0.617
R19E-102720-02.5.5 South pit bottom, 5.5 feet bgs	<17.2	<43.0	<0.0238	<0.0238	<0.0297	<0.0594
R19E-102720-03.3 Central east pit bottom, 3 feet bgs	<20.7	<51.8	<0.0238	<0.0238	<0.0297	<0.0595
R19E-102720-04.2.5 Central pit bottom, 2.5 feet bgs	<20.0	<49.9	<0.0224	<0.0224	<0.0280	<0.0560
R19E-102720-05.2 Southwest pit bottom, 2 feet bgs	<20.1	<50.4	<0.0243	<0.0243	<0.0304	<0.0608
R19E-102720-06.2 East pit bottom, 2 feet bgs	<20.7	<51.7	<0.0237	<0.0237	<0.0296	<0.0593
R19E-102720-07.2 Northeast pit bottom, 2 feet bgs	<19.6	<49.0	<0.0265	<0.0265	<0.0331	<0.0662
R19E-102720-08.3 South sidewall, 3 feet bgs	<19.6	<49.1	<0.0244	<0.0244	<0.0305	<0.0610
R19E-102720-09.3 Southwest sidewall, 3 feet bgs	<19.7	<49.2	<0.0239	<0.0239	<0.0299	<0.0598
R19E-102820-10.1 Northeast pit bottom, 1 feet bgs	<18.6	<46.5	<0.0452	<0.0452	<0.0565	<0.113
R19E-102820-11.2 Pit bottom, 2 feet bgs	<20.1	<50.2	<0.0282	<0.0282	<0.0353	<0.0706
R19E-102820-12.8	<17.7	<44.3	<0.0286	<0.0286	<0.0357	<0.0715



Sample ID and Location	Analyte					
	Diesel	Heavy Oil	Benzene	Toluene	Ethylbenzene	Total Xylenes
Pit bottom, 8 feet bgs						
R19E-102820-13.1 West pit bottom, 1 feet bgs	74.6	<47.6	<0.0266	<0.0266	<0.0332	<0.0665
R19E-102820-14.1 North pit bottom, 1 feet bgs	<19.8	<49.4	<0.0340	<0.0340	<0.0425	<0.0850
R19E-102820-15.1 North pit bottom, 1 feet bgs	<20.5	<51.3	<0.0276	<0.0276	<0.0346	<0.0690
R19E-102820-16.1 South of pit, 1 feet bgs	<21.6	<54.0	<0.0375	<0.0375	<0.0469	<0.0937
R19E-102820-17.6 East Sidewall, 6 feet bgs	<18.5	<46.3	<0.0225	<0.0225	<0.0281	<0.0562
R19E-102820-18.6 South sidewall, 6 feet bgs	<17.9	<44.8	<0.0241	<0.0241	<0.0301	<0.0602
R19E-102820-19.6 West sidewall, 6 feet bgs	<19.8	<49.5	<0.0284	<0.0284	<0.0355	<0.0709
MTCA Method A Cleanup Level	2,000	2,000	0.03	7	6	9

Results in **Bold** indicate a result above the MTCA Method cleanup level.

Laboratory analysis identified one sample location with a detectable concentration of diesel range hydrocarbons: R19E-102820-13.1 at 1 foot bgs with 74.6 milligrams of analyte per kilogram of soil (mg/Kg), below the MTCA Method A cleanup level of 2,000 mg/Kg for diesel.

All other constituents including heavy oil and BTEX were non-detect for all samples collected. Sample R19E-102820-13.1 was reported with non-detectable concentrations of PAHs.

Three of the samples reported with non-detect concentrations of benzene had analytical reporting limits slightly above the MTCA Method A cleanup level. Based on site use, the previous waste characterization sampling completed at the site, and consistency with other samples collected during site remediation, benzene has not been identified as a constituent of concern.

No data qualifiers were noted in the laboratory results. A review of data qualifiers indicates that laboratory QA/QC are satisfactory and should not affect project data or objectives.

7.0 Soil Treatment

Tri-Valley Construction, DR Trucking Services, LLC, and SD Construction completed 36 trips during remedial activities in October 2020. A total of 881.83 tons of PCS was delivered to Anderson's Rock & Demolition Pits and PCS Treatment Facility in Yakima, Washington for treatment by land farming:



- October 22, 2020 – 4 trips
- October 26, 2020 – 14 trips
- October 27, 2020 – 12 trips
- October 28, 2020 – 6 trips

See Appendix D for copies of weight tickets from DTG Recycle.

8.0 Discussion

The completed waste characterization event for the smudge pot storage area confirmed the presence of diesel fuel in site soils at 86,000 mg/Kg which is above the MTCA Method A cleanup levels for diesel range petroleum hydrocarbons of 2,000 mg/Kg.

During the remediation event from October 22 to October 28, 2020, Fulcrum collected nineteen (19) representative confirmation samples from excavation pit bottom and sidewalls of the former smudge pot storage area. One of the sample results detected a diesel concentration of 74.6 mg/Kg below the MTCA Method A Cleanup level. All other samples collected from the excavation area were documented with non-detect concentrations for all constituents analyzed.

8.1 PAH Screening Analysis

Following analysis of final confirmation samples, Fulcrum requested additional analysis of one sample from the final excavation (R19E-102820-13.1) for carcinogenic PAHs to assess human health risk pursuant to WAC 173-340-708(8)(e). Results were reported under Fremont work order 2010479. See Appendix E for complete laboratory results.

The sample was reported with carcinogenic PAH concentrations below the method reporting limit. Using ½ the practical quantitation limit (PQL) for the samples, method reporting limits are confirmed to be low enough to provide a maximum total technical equivalent concentration (TTEC) of 0.030 mg/Kg, which is below the MTCA Method A cleanup level of 0.1 mg/Kg for carcinogenic PAHs in soil.

8.2 Terrestrial Ecological Evaluation

The Terrestrial Ecological Evaluation (TEE) process is required to be completed as a portion of cleanup action alternative review under MTCA. The intent of the TEE is to determine if site soil conditions subsequent to development of remedial alternative(s) may pose a threat to the terrestrial environment, including soil biota, plants, and wildlife. The TEE procedures are presented in WAC 173-340-7490 through 7494.

Under the simplified TEE in WAC 173-340-7492, evaluation may be ended where residual concentrations are below threshold values in WAC 173-340-900, Table 749-2. Final confirmation sample results identified detectable concentration of diesel at a maximum concentration of 74.6 mg/Kg and below the Table 749-2



threshold value of 460 mg/Kg for unrestricted land use. Based on the final confirmation sample results, no further TEE is warranted.

9.0 Conclusions

Fulcrum performed waste characterization and soil remediation excavation services associated with a former smudge pot storage area located at Ranch 19 East located in Yakima County, Washington. The smudge pot storage area was impacted by diesel as a result of handling and storing smudge pots that contained diesel fuel.

A total of 881.83 tons of soil was excavated from the former smudge pot storage location on the site. All excavated soils were transported to DTG Recycle for land farming.

Final post-remedial conditions were documented to meet Ecology regulatory criteria at the apparent smudge pot area and in Fulcrum's opinion no additional remediation is warranted associated with the Ranch 19 East area.

Fulcrum recommends that a copy of this remediation report be retained. A copy of this report should be provided to a prospective buyer or investor of this property.

10.0 Limitations

Fulcrum Environmental Consulting, Inc. has performed professional services in accordance with generally accepted professional consulting principles and practices. No other warranty, expressed or implied, is made. The conclusions and recommendations are based upon our field observations, field screening, and independent laboratory analysis. The scope of services for this project is limited to the investigation of one petroleum spill location associated with the site.

Fulcrum makes no warranties expressed or implied as to the accuracy or completeness of other's work included or referenced herein, nor the use of segregated portions of this report. This document does not imply that the property is free of other environmental concerns. This report is solely for the use and information of our client. Any reliance on this report by a third party is at that party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing at the time services were performed. Fulcrum Environmental Consulting, Inc. is not responsible for the impact of changes in environmental standards, practices, or regulations subsequent to the performance of services. Fulcrum Environmental Consulting, Inc. assumes no liability for conditions that were not included in our scope of services, or conditions not generally recognized as predictable when services were performed.



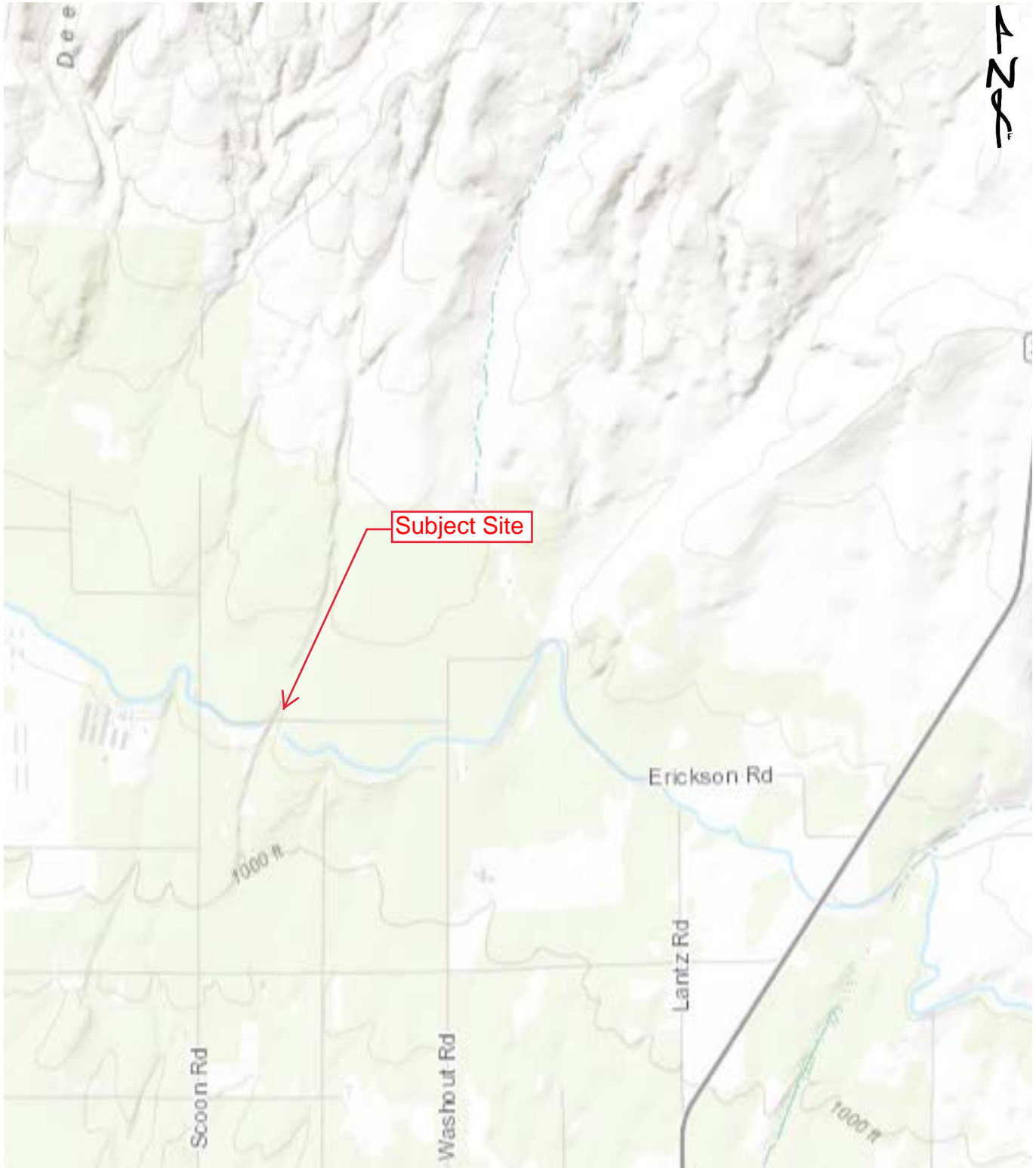
Figures

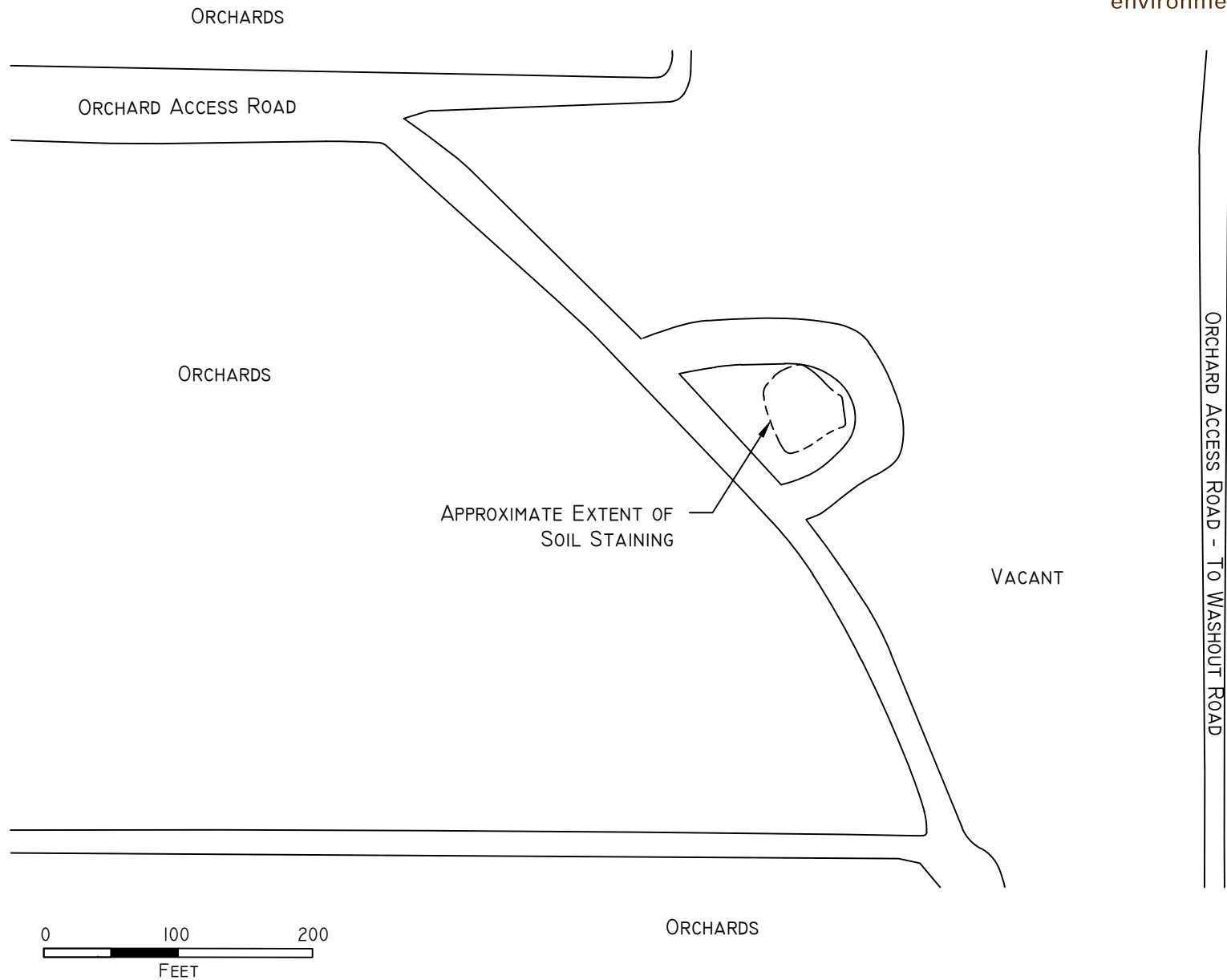
Figure 1: Site Location

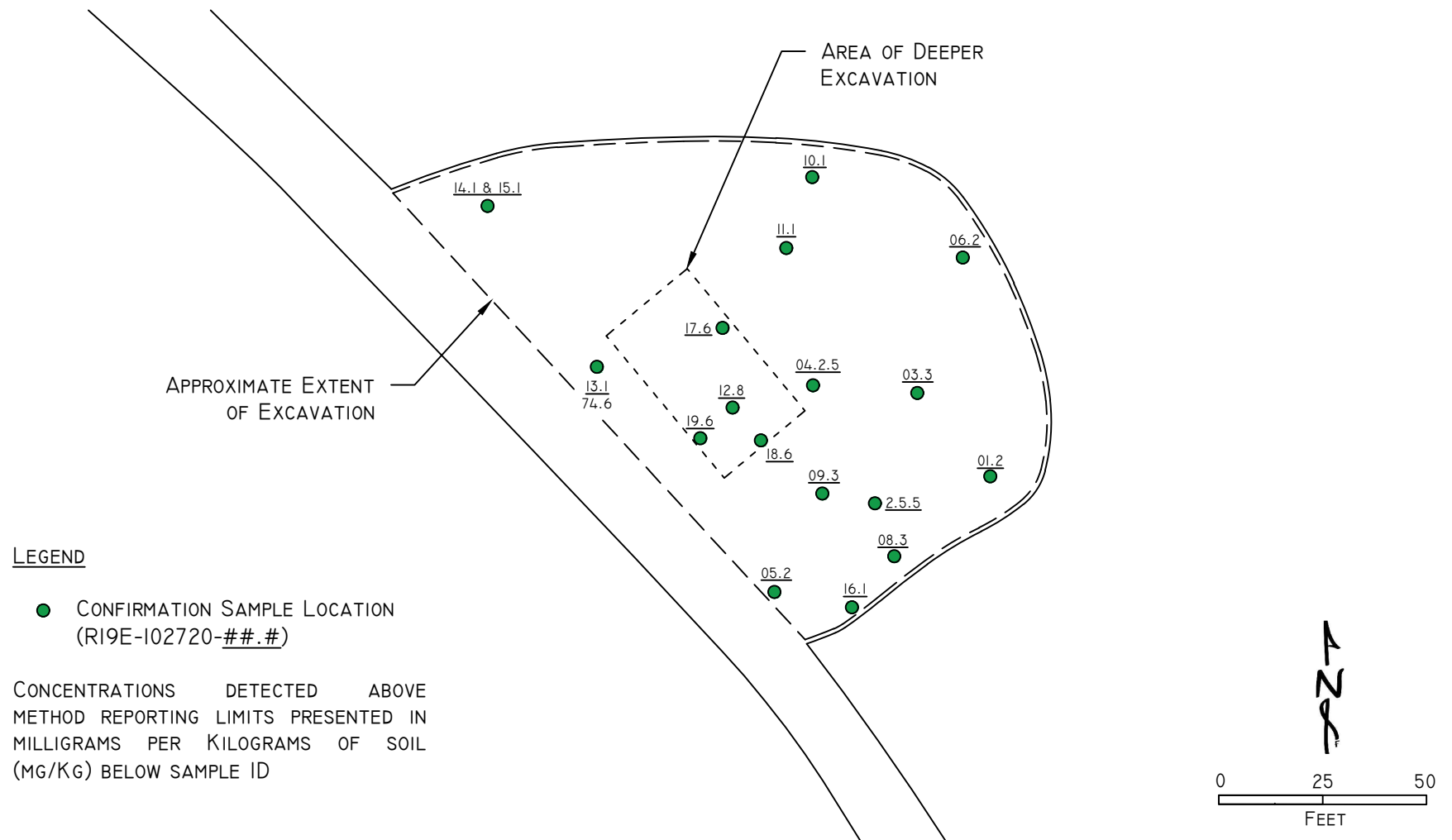
Figure 2: Smudge Pot Excavation

Figure 3: Sample Location

Figure 4: TEE Acreage











Appendix A

Professional Certifications



THIS CERTIFIES THAT

RYAN K. MATHEWS

HAS SUCCESSFULLY MET ALL THE REQUIREMENTS OF EDUCATION, EXPERIENCE AND
EXAMINATION, AND IS HEREBY DESIGNATED A

**CERTIFIED HAZARDOUS MATERIALS MANAGER
CHMM**

January 31, 2007

DATE OF CERTIFICATION

14149

CREDENTIAL NUMBER

January 31, 2023

CERTIFICATION EXPIRES

EXECUTIVE DIRECTOR



VALID SO LONG AS THIS CREDENTIAL IS RENEWED ACCORDING
TO SCHEDULE AND IS NOT OTHERWISE REVOKED.



Accredited by the American National Standards Institute and
the Council of Engineering and Scientific Specialty Boards



STATE OF WASHINGTON

DEPARTMENT OF LICENSING – BUSINESS AND PROFESSIONS DIVISION



THIS CERTIFIES THAT THE PERSON OR BUSINESS NAMED BELOW IS AUTHORIZED AS A

**GEOLOGIST
HYDROGEOLOGIST**

**JEREMY MATTHEW LYNN
1406 SUNSET DRIVE
PROSSER WA 99350**

2914

License Number

12/05/2011

Issued Date

01/18/2019

Expiration Date

Pat Kohler
Pat Kohler, Director



Appendix B

Remediation Work Plan

Remediation Work Plan
Smudge Pot Storage Area

Ranch 19
441 Williamson Road
Sunnyside, Washington

Project Number: 1992902.15

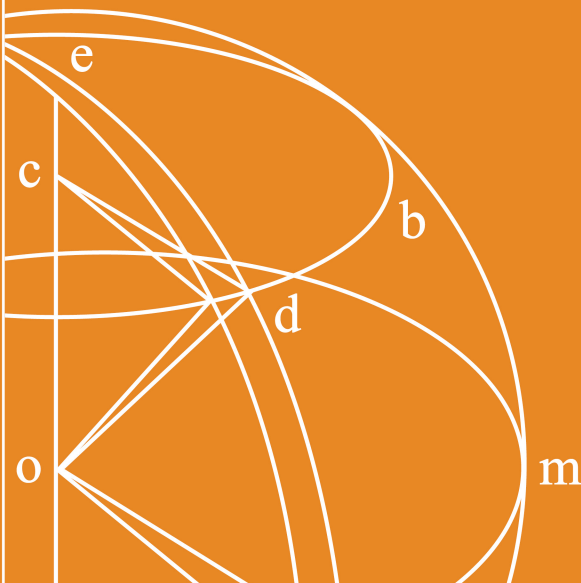
December 17, 2019

Prepared for:

WA LAND MGMT, LLC
c/o: Guy Kisling
22605 Southeast 56th Street #200
Issaquah, Washington 98029

Prepared by:

Fulcrum Environmental Consulting, Inc.
406 North 2nd Street
Yakima, Washington 98901





Report Title: Remediation Work Plan, Smudge Pot Storage Area

Project Number: 192902.15

Date: December 17, 2019

Site: Ranch 19, 441 Williamson Road
Sunnyside, Washington
GPS coordinates 19W: 46.390524, -120.012625 / 19E: 46.403126, -120.000132

Prepared for: WA LAND MGMT, LLC
c/o: Guy Kisling
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The professionals who completed site services, prepared, and reviewed this report include but are not limited to:

Authored by:  **Date:** 12.17.19
Nicole McPhee, Environmental Technician
Fulcrum Environmental Consulting, Inc.

Reviewed by:  **Date:** 12.17.19
Ryan K. Mathews, CIH, CHMM, Principal
Fulcrum Environmental Consulting, Inc.



Report Integrity:

Fulcrum Environmental Consulting, Inc.'s scope of service for this project was limited to those services as established in the proposal, contract, verbal direction, and/or agreement. This report is subject to applicable federal, state, and local regulations governing project-specific conditions and was performed using recognized procedures and standards of the industry. Scientific data collected in situ may document conditions that may be specific to the time and day of service, and subject to change as a result of conditions beyond Fulcrum's control or knowledge. Fulcrum makes no warranties, expressed or implied as to the accuracy or completeness of other's work included herein. Fulcrum has performed these services in accordance with generally accepted environmental science standards of care at the time of the inspection. No warranty, expressed or implied, is made.



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1.0 Introduction

This Remediation Work Plan has been prepared on behalf of WA LAND MGMT, LLC by Fulcrum Environmental Consulting, Inc. (Fulcrum) to describe the remediation activities that will be conducted at Ranch 19, located at 441 Williamson Road, Sunnyside, WA. See Figure 1 for general site location.

The property is operated as irrigated permanent plantings of fruit trees. Property operated by WA LAND MGMT, LLC includes apples and soft fruits (peaches, apricots, etc.). Since first orchard use, smudge pots have been utilized as the primary frost protection system at the site. Typical of common regional practice, during off-season use in summer months, the smudge pots were removed from the field and stored at the site in a concentrated area(s).



During a Phase I Environmental Site Assessment (ESA) site walk performed on behalf of a prospective buyer, visibly stained soils were observed in the smudge pot storage area. The prospective buyer notified WA LAND MGMT, LLC and requested additional investigation and remediation if necessary.

Fulcrum completed limited Phase II investigation activities at the site to evaluate constituents of concern (COC); and to approximate extents of impact and soil volumes. Applicable results of the Phase II investigation are summarized in Section 3.



The intent is that all project activities were completed as provided in The Model Toxics Control Act (MTCA), Washington Administrative Code (WAC) 173-340. In our professional opinion, the use of the independent remediation process is appropriate given the current understanding of site conditions.

1.1 Purpose

The purpose of the work plan is to complete an independent remediation of site soils as provided under WAC 173-340-515. During this work, Fulcrum intends to consider all appropriate remedial strategies in accordance with the MTCA including engagement of Ecology under the Voluntary Cleanup Program and/or proceeding as an independent remedial action. These strategies may include calculating alternate cleanup levels under WAC 173-340-700 for petroleum hydrocarbons; completing a risk-based evaluation; using of monitored natural attenuation (MNA); applying institutional and engineering controls with a restrictive covenant; etc., or a combination of these methods.



1.2 Project Parties

This project is a coordination of the efforts of WA LAND MGMT, LLC, Fulcrum, and selected contractors. Fulcrum will lead remediation activities. Table 1 lists the people involved in this project, their respective organization, and their role.

Table 1: Organization of Project Staff and Responsibilities

Person/Agency or Firm	Role/Responsibility
Brett Calhoun, General Manager WA LAND MGMT, LLC Brett.Calhoun@pridepacking.com , 509.728.2772	Site General Manager: Responsible for assisting with site access.
Frank Winslow, Site Manager Washington State Department of Ecology frank.winslow@ecy.wa.gov , 509.454.7886	Provides local regulatory review of investigation findings and review of project documentation.
Ryan K. Mathews, CIH, CHMM Fulcrum Environmental Consulting, Inc. RMathews@efulcrum.net , 509.574.0839	Fulcrum Principal: Responsible for reviewing and managing project charter and contracting.
Jeremy M. Lynn, LHG, PMP Fulcrum Environmental Consulting, Inc. Jeremy.Lynn@efulcrum.net , 509.405.2450	Reviews the project scope, budget, and tracks progress. Provides supervision of onsite investigation activities and review of project geologic and hydrogeologic evaluation and documentation. All project documentation will be stamped by a Washington State Licensed Hydrogeologist.
Kyle Ames, GIT Fulcrum Environmental Consulting, Inc. Jeremy.Lynn@efulcrum.net , 509.574.0839	Assist with the site remediation and completes soil sampling under the direction of Fulcrum's Licensed Hydrogeologist.
Ashley Yellick, GIT Fulcrum Environmental Consulting, Inc. Jeremy.Lynn@efulcrum.net , 509.574.0839	Assist with the site remediation and completes soil sampling under the direction of Fulcrum's Licensed Hydrogeologist.
Mike Ridgeway Fremont Analytical, Inc. mriddgeway@fremontanalytical.com ; 206.352.3790	Project Laboratory: Responsible for completion of work tasks, including laboratory analysis, sample container provision, laboratory QA/QC, and review of project laboratory analysis.
Chris Smith Spokane Environmental Solutions, Inc. chris@spokaneenvironmental.com ; 509.999.3600	Remedial Excavation Contractor Principal: Responsible for completion of excavation and soil transport activities.

1.3 Work Plan Organization

In addition to this Introduction, the Work Plan includes the following sections:

- Section 2: Site Description – describes the location, physical setting, and operational history at the Site.
- Section 3: Prior Investigation – summarizes the scope and results from previous environmental investigations that have been conducted at the Site in chronological order and describes the current



understanding of environmental site conditions based on the previous investigations and the operational history of the Site.

- Section 4: Remedial Objectives – describes the objectives of the soil remediation work.
- Section 5: Remediation Activities – provides a narrative of the work tasks that will be completed to accomplish soil removal.
- Section 6: Reporting and Schedule – describes the investigation report that will be prepared per MTCA requirements and the schedule for completion of significant investigation tasks.
- Section 7: References – provides a list of references cited in the Work Plan.
- Several appendices are included to provide information supporting the scope of the Work Plan.

1.4 Pertinent Regulations and Approach

In March of 1989, the Model Toxics Control Act (MTCA) went into effect in Washington State. The MTCA regulations set standards to ensure quality of cleanup and protection of human health and the environment. A major portion of the MTCA regulation (completed in 1991) was the development of numerical cleanup standards and requirements for cleanup actions. Three options were established under MTCA for site-specific cleanup levels: Method A, B and C. Method A defines cleanup levels for 25 of the most common hazardous substances found at sites. Method B levels are set using a site risk assessment, which enables consideration of site-specific characteristics. Method C is similar to Method B, however, the individual substance's cancer risk portion of the assessment is set at 1 in 100,000 rather than 1 in 1,000,000.

Ecology's MTCA Method A cleanup tables were developed to provide conservative cleanup levels for sites undergoing routine cleanup actions or those sites with relatively few hazardous substances. Method A cleanup levels are specifically designated as appropriate for residential facilities and are appropriate for a conservative approach at school, public and commercial sites. Therefore, Fulcrum has determined that Ecology's MTCA Method A cleanup levels will be used as site screening levels (SSLs) during the investigation. However, use of Method A levels does not limit the use of site-specific Method B levels in future remediation design or implementation. Where MTCA Method A cleanup levels are not provided, Fulcrum will utilize Method B levels as the SSL.

1.5 Wetlands Evaluation

Prior to initiation of remedial excavation, the site will be evaluated for the presence of wetlands. Evaluation will be completed using the following guidance criteria:

- US Army Corps of Engineers – Wetland Delineation Manual, January 1987.
- US Army Corps of Engineers – Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), September 2008.
- Eastern Washington Wetland Rating System, January 2015.

Should wetlands be identified, a wetlands mitigation plan will be completed under separate and appended to this remediation work plan.



1.6 SEPA Review

Due to projected remedial soil volume exceeding 500 cubic yards, review of proposed excavation will be completed under State Environmental Policy Act (SEPA) checklists, and if applicable public comment, prior to initializing excavation activities. The SEPA documentation will be completed under separate cover and is not included within this remediation.

2.0 Site Description

Ranch 19 site is located at 441 Williamson Road, in Sunnyside, WA and is located on Yakima County Assessor tax parcel 191321-24002.

2.1 Physical Setting

The physical setting of the Site in terms of climate, topography, regional geology, regional hydrogeology, and surface water is described in the following paragraphs.

2.1.1 Climate

The climate is semi-arid with cool winters and hot/dry summers. The average daily maximum temperature at the Site ranges from 36 to 88 degrees Fahrenheit and the average annual precipitation is 8.4 inches (NOAA, 2016).

2.1.2 Topography

Site topography is generally level and varies with an elevation of about 1225 feet above sea level.

2.1.3 Regional Geology

The Site is located in the Yakima Valley. The regional geology consists of Miocene basalt flows of the Columbian River Basalt Group overlain by the Ellensburg Formation, which is overlain by mostly Holocene alluvial deposits resulting from the adjacent Yakima River. Geologic information for the Site comes from the *Geologic Map of the Yakima Quadrangle, Washington* (Bentley, 1983) and the logs from nearby wells.

2.1.4 Regional Hydrogeology

The hydrogeologic units of the Yakima region can be split into the following two categories (Vaccaro, et al., 2009):

- Basin-Fill Units (including unconsolidated alluvial deposits and semi-consolidated to consolidated units of the Ellensburg Formation)
- Columbia River Basalt Group and interbedded units



The lithology and hydraulic characteristics of the basin-fill units are diverse and groundwater levels generally follow land surface contours. Groundwater generally flows towards the Yakima River in the shallow basin-fill units at the Site. The flow in the deeper units is controlled primarily by characteristics of the unit itself and the overlying units. Flowing artesian conditions exist in the Yakima basin where groundwater is present under confined conditions, described as “aerially extensive productive artesian zones.”

2.1.5 Groundwater

A limited review of well logs on Washington State Department of Ecology Well Log Report indicates the first groundwater bearing zone is estimated to be present within the upper 50-feet but production wells are likely to be in excess of 300-feet.

2.2 Land Use

The current land use of Ranch 19 is designated by Yakima County as “agricultural”. Presently the site is operated as irrigated permanent plantings of apples or soft fruits (including apricots, peaches, etc.).

3.0 Previously Completed Investigations

An initial investigation completed in September 2019 identified the following constituents of concern:



Table 2: Waste Characterization Sample Results – Ranch 19E & 19W

Analyte	Result (mg/Kg)		MTCA Method A CUL	Exceeds MTCA Method A CUL	Dangerous Waste Level (mg/L)	Exceeds Dangerous Waste Level
Total PCBs ¹	<0.101	<0.100	10 ²	No	-	-
Diesel	86,000	233,000	2,000	Yes	-	-
Heavy Oil	<503	<50.4	2,000	No	-	-
<i>Polyaromatic Hydrocarbons</i>						
Benzo[a]pyrene	<0.402	0.267	2.0 ²	No	-	-
Benz[a]anthracene	0.234	<0.385	NA	NA	-	-
Benzo[b]fluoranthene	0.356	0.628	NA	NA	-	-
Benzo[k]fluoranthene	0.292	0.491	NA	NA	-	-
Chrysene	0.762	1.27	NA	NA	-	-
Dibenz[a,h]anthracene	0.076	0.096	NA	NA	-	-
Indeno[1,2,3-cd]pyrene	0.225	0.541	NA	NA	-	-
PAH TTEC (Per WAC 173-340-708)	0.1259	0.4553	2.0 ²	No	-	-
Pyrene	8.19	12.9	2,400	No	-	-
Benzo[g,h,i]perylene	0.177	0.556	NA	NA	-	-
Total PAH [Percentage Per WAC 173-303-100(6)]	0.107 %	0.171%	-	-	1%	No
<i>Semi-Volatile Organic Compounds</i>						
Naphthalene	0.081	0.443	5	No	-	-
2-Methylnaphthalene	0.148	1.32	320 ³	No	-	-
1-Methynaphthalene	0.091	0.879	340 ³	No	-	-
<i>Volatile Organic Compounds</i>						
Halogenated/Chlorinated VOCs ¹	-	-	-	-	-	-
Benzene	<0.020	<0.021	0.03	No	0.5	No
Toluene	0.027	0.085	7	No	-	-
Ethylbenzene	<0.025	0.048	6	No	-	-
Total Xylenes	0.064	0.202	9	No	-	-
n-Propylbenzene	-	0.045	8,000 ³	No	-	-
sec-Butylbenzene	-	0.080	8,000 ³	No	-	-
1,2,4-Trimethylbenzene	0.040	0.152	800 ³	No	-	-
Naphthalene	-	0.199	5	No	-	-
<i>Metals</i>						
Mercury	<0.245	<0.250	2	No	0.2	No
Arsenic	3.07	2.41	20	No	5	No
Cadmium	0.281	0.416	2	No	1	No
Total Chromium	10.3	9.85	19 / 2,000 ⁴	No	5	No
Lead	8.63	16.1	250	No	5	No

All results, method reporting limits, and cleanup levels are presented in mg/Kg. Dangerous waste threshold values where published in WAC 173-303-090(8) are presented in milligrams per liter.

Results in **Bold** indicate a result above the MTCA Method cleanup level.

¹ The individual chemical constituents were not detected above the method reporting limit (MRL)

² Industrial MTCA Method A cleanup level

³ Select constituents have established MTCA Method A cleanup level. When a MTCA Method A cleanup level is not available, the MTCA Method B Standard Value is utilized for evaluation.

⁴ The MTCA Method A cleanup level for Chromium (III) is 2,000 mg/Kg and for Chromium (VI) is 19 mg/Kg



Depth of soil impact based on test pits completed during the initial investigation identified the following conditions:

- Ranch 19E – approximately 515 tons of soil estimated to be removed
- Ranch 19W – approximately 1,537 tons of soil estimated to be removed

Based on results of the initial investigation, groundwater is not anticipated to be encountered during remediation excavation. If groundwater is encountered, additional evaluation may be needed to meet MTCA regulatory requirements and applicable amendments to this remediation work plan will be required.

4.0 Remedial Objectives

4.1 Remedial Action Objectives

Remedial Action Objectives are narrative goals for a cleanup action that address how the cleanup fits into the overall MTCA cleanup process. The following Remedial Action Objectives have been identified for the primary contaminants found at the Site:

1. Petroleum contaminated soils (diesel range petroleum hydrocarbons) will be addressed to achieve MTCA Method A cleanup levels in accordance with MTCA, including engagement of Ecology under the Voluntary Cleanup Program and/or proceeding as an independent remedial action through use of remedial strategies that may include calculating alternate cleanup levels under WAC 173-340-700 for petroleum hydrocarbons; completing a risk-based evaluation; using of monitored natural attenuation (MNA); applying institutional and engineering controls with a restrictive covenant; etc., or a combination of these methods.

Guidance associated with remedial action evaluation is presented in WAC 173-340-360.

4.2 Basis for the Selected Remedy

The selected remedy also meets the other requirements for selection under WAC 173-340-360(2)(b), which include the following:

1. Using Permanent Solutions to the Maximum Extent Practicable. Excavation and offsite treatment or disposal is a permanent solution. Use of treatment technologies such as incineration for the full extent of impacted soil is not a permanent solutions to the maximum extent practicable because their costs are substantially disproportionate to their benefits compared to other options.
2. Providing for a Reasonable Restoration Time Frame. Cleanup goals will be achieved at the Site following excavation of accessible soils. Where soils cannot be fully excavated, the remedial solution is required to have reasonable restoration time frame. MTCA does not provide a definition for “reasonable restoration time frame” and this approach is best considered in evaluation with the toxicity, mobility, and accessibility of the contamination.



3. Considering Public Concerns. The public review process is not required for independently completed projects.

If in-place management of impacted soils is appropriate it must meet the following minimum requirement for selection of a cleanup action under WAC 173-340-360(2)(a):

1. Protect Human Health and the Environment. The selected remedy will protect human health and the environment in the short-term and long-term by removing discrete areas of localized soil contamination and preventing exposure to impacted soil via consolidation of such soil beneath impermeable concrete or asphalt structures.
2. Comply with Cleanup Standards. The selected remedy will comply with cleanup levels for soil.
3. Comply with Applicable State and Federal Laws. The selected remedy is expected to comply with applicable state and federal laws.
4. Provide Compliance Monitoring. If contamination remains, a compliance monitoring program will be required.

The Remediation Work Plan takes into consideration identified contaminants, project construction scope, regulatory guidance, and remediation objectives.

5.0 Remediation Activities

5.1 General Steps

Remedial activities will be performed in accordance with MTCA. Excavation extent will be determined based on the conditions encountered in the field and will be guided by field screening, including color, odor, sheen, and headspace volatile organic compounds (VOCs) measured with a photoionization detector (PID). The excavation extents, primarily the depth, will be informed by the initial investigation completed in September 2019.

Safety measures will be implemented at each property, as follows:

- Controlling traffic as needed during earthwork activities.
- Protecting the excavations on a daily basis, if the area is not backfilled immediately or a gentle slope (typically less than 1 to 4) cannot be achieved.
- Placing high-visibility fencing around each excavation area to provide a visual warning for the public, personnel, and/or trespassers, until the area is ready to be backfilled.
- Using warning tape or other barriers at the site during earthwork activities.

Only if the excavation exceeds 3-feet will backfill be placed. If PCS remains at the location, a landscaping geotextile fabric shall be placed prior to placement of clean backfill.



All excavated soils will be delivered to Anderson's Rock & Demolition Pits and PCS Facility for treatment. If debris or large rock are encountered and reasonably separable, these materials may be retained onsite or disposed as solid waste.

Given the fall conditions and generally moist soil conditions, dust abatement is not anticipated to be needed. However, if conditions occur and dust abatement is needed only the water needed to accomplish dust abatement will be used as wet soils are more difficult to excavate and transport and impair the use of field screening techniques.

If trucks cannot be placed in close proximity to the excavation area plastic sheeting or tarps will be placed under trucks during the loading activities.

5.2 Field Records

A record of all field work shall be kept on the field form included in Appendix A and in the field geologist log book. The field forms and log book shall be reviewed by the supervision Geologist on a daily basis.

5.3 Field Screening

All sample locations will be screened in the field using the following methods:

- Visual indicators of staining
- Odor
- Sheen test
- Photo-ionization detector (PID)

5.4 Confirmation Soil Sampling

Final discrete soil samples will be collected from the specific location that based on field screening suggests the highest potential for COCs. The confirmation sampling will be collected based on the following field criteria:

5.4.1 Pit Bottom Samples

- A minimum of 3 samples will be collected from the pit bottom from the excavation
- Where the total area of the excavation exceeds 500 square feet, then 1 additional pit bottom sample will be collected for every 1,000 additional square feet

5.4.2 Sidewall Samples

- Where the excavation depth exceed 3 feet below ground surface, a minimum of four sidewall samples will be collected
- Sidewall samples will be collected at a frequency of one sample per 50 linear feet of excavation sidewall



Sample labeling scheme shall consist of the following:

Ranch Number – Date – Unique Sample Number – Depth of Sample (e.g. R44 – 010120 – 01.01)

Sample locations within the established parameters above, will additionally use field indicators of impact to select sample locations with the greatest potential for residual impact. Soil samples at depths of up to 3-feet below ground surface where a safely accessed excavation is present shall be collected directly from the desired sample location. Where the sampling depth exceeds 3-feet, the soil sample shall be collected from the relatively undisturbed soil between the teeth of the excavator bucket.

Confirmation soil samples will be collected and analyzed by the following methodologies:

- Diesel and Heavy Oil by NWTPH-DxExt
- Benzene, Toluene, Ethylbenzene and Xylenes by Environmental Protection Agency (EPA) Method 8260C

All laboratory analysis shall be performed to demonstrate that the COCs are not present above the respective cleanup level.

5.4 Evaluation of Laboratory Results

Upon receipt of laboratory results review laboratory and method performance as provided in the QAPP.

6.0 Risk Screening Evaluation

This section describes the screening level risk assessment that will be conducted for the Site as part of the Remediation Work Plan if all PCS cannot be excavated. Sample locations or areas that do not meet MTCA cleanup levels will be described on tables and maps.

6.1 Potential Human Health Impacts

Data collected at the Site will be screened using Method A cleanup levels and standard Method B default values as developed by Ecology pursuant to Washington's MTCA Act (part VII of chapter 70.105D RCW) and released to stakeholders through the Cleanup Levels and Risk Calculation (CLARC) web site to determine whether concentrations of hazardous substances warrant further consideration with regard to potential human health impacts. Standard Method B cleanup levels will be adjusted for additive health effects associated with multiple hazardous substances and pathways of exposure in accordance with WAC 173-340-708. Locations that meet Method A or Method B cleanup levels may generally be used without future use restrictions on the property due to residual levels of contamination.

As described in WAC 173-340-700(6)(d), practical quantitation limits (PQLs) will also be considered during the screening level human health risk assessment. PQLs and Site screening levels that will be used



in the Work Plan are described in the QAPP in Appendix B. The importance of using laboratory methods that will provide PQLs at or below Site screening levels is acknowledged.

6.2 Potential Ecological Impacts

Potential ecological impacts will be evaluated by following the requirements for a terrestrial ecological evaluation (TEE) set forth in WAC 173-340-7491 through WAC 173-340-7493 to determine whether concentrations of hazardous substances warrant further consideration with regard to terrestrial receptors (including soil biota, plants, and wildlife), Site conditions identified through the Work Plan will be evaluated to determine whether the Site meets any of the no further evaluation criteria for a TEE in WAC 173-340-7491(1). The four no further evaluation criteria are:

- All soil contaminated with hazardous substances is, or will be, located below the point of compliance.
- All soil contaminated with hazardous substances is, or will be, covered by buildings, paved roads, pavement, or other physical barriers that will prevent plants or wildlife from being exposed to the soil contamination.
- There is less than 1.5 acres of contiguous undeveloped land on the Site or within 500 feet of the Site contaminated with hazardous substances and there is less than $\frac{1}{4}$ acre of contiguous undeveloped land on or within 500 feet of the Site affected by specific hazardous substances known to pose ecological concern.
- Concentrations of hazardous substances in soil do not exceed natural background levels.

The results of this evaluation will be documented in the Investigation Report. It is acknowledged that the no further evaluation criteria are dependent on institutional controls and/or completion dates for future development that are acceptable to Ecology.

If an exclusion from a TEE cannot be documented, then Site conditions will be evaluated to determine whether the Site meets any of the criteria for a site-specific TEE as set forth in WAC 173-340-7491. In summary, the site-specific TEE criteria are:

- The site is located on, or directly adjacent to, an area where management or land use plans will maintain or restore native or semi-native vegetation.
- The site is used by a threatened or endangered species.
- The area of contamination is located on a property that contains at least ten acres of native vegetation within 500 feet of the contamination, not including vegetation beyond the property boundaries.
- Ecology determines that the site may present a risk to significant wildlife populations.

If none of these site-specific criteria apply to the Site, then a simplified TEE will be conducted as set forth in WAC 173-340-7492 and the results will be summarized in the remediation report. If one or more of these site-specific criteria apply to the Site, then a site-specific TEE will be conducted as set forth in WAC 173-340-7493 and the results will be summarized in the remediation report. WAC Table 749-3 will be used for initial screening purposes using the COCs used in the remediation report.



7.0 Reporting & Scheduling

Fulcrum anticipates completing proposed remediation activities as follows:

Table 3: Projected Schedule of Events

Projected Completion Date	Tasks
March 30, 2020	Submit public utility request
March 30, 2020	Submit request for soil treatment to Yakima Health District
April 1, 2020	Complete private utility locate
April 6 to April 17, 2020	Complete soil excavation
About 7 days following sample collection	Receive laboratory results
Before May 15, 2020	Issue Soil Remediation Report

The proposed timeline is dependent upon subcontractor availability and currently scheduled onsite activities. Approximately 2 weeks following completion of receipt and review of laboratory analysis, a draft report of the investigation findings will be issued by Fulcrum. The proposed timeline is additionally based on an anticipated 5-business day turn-around-time for receipt of sample analytical results following completion of onsite activities.

8.0 References

EPA Requirements for Quality Assurance Project Plans, EAP QA/R-5, EPA/240/B-01/003, U. S. Environmental Protection Agency, March 2001.

Guidance for Quality Assurance Project Plans, EAP QA/G-5, EPA/240/R-02/009, U. S. Environmental Protection Agency, December 2002.

Guidance for Data Quality Assessment – Practical Methods for Data Analysis, U.S. Environmental Protection Agency, EPA 600/R-96/084, EPA EZ/G9, QA97 Version, January 1998.

Guidance for Remediation of Petroleum Contaminated Sites, Washington State Department of Ecology, Publication 10-09-057, November 2010, revised June 2016.

Incremental Sampling Methodology, Interstate Technology & Regulatory Council, <https://www.itrcweb.org/ism-1/>, February 2012.

Model Toxics Control Act, Washington State Department of Ecology, Washington Administrative Code 173-340.

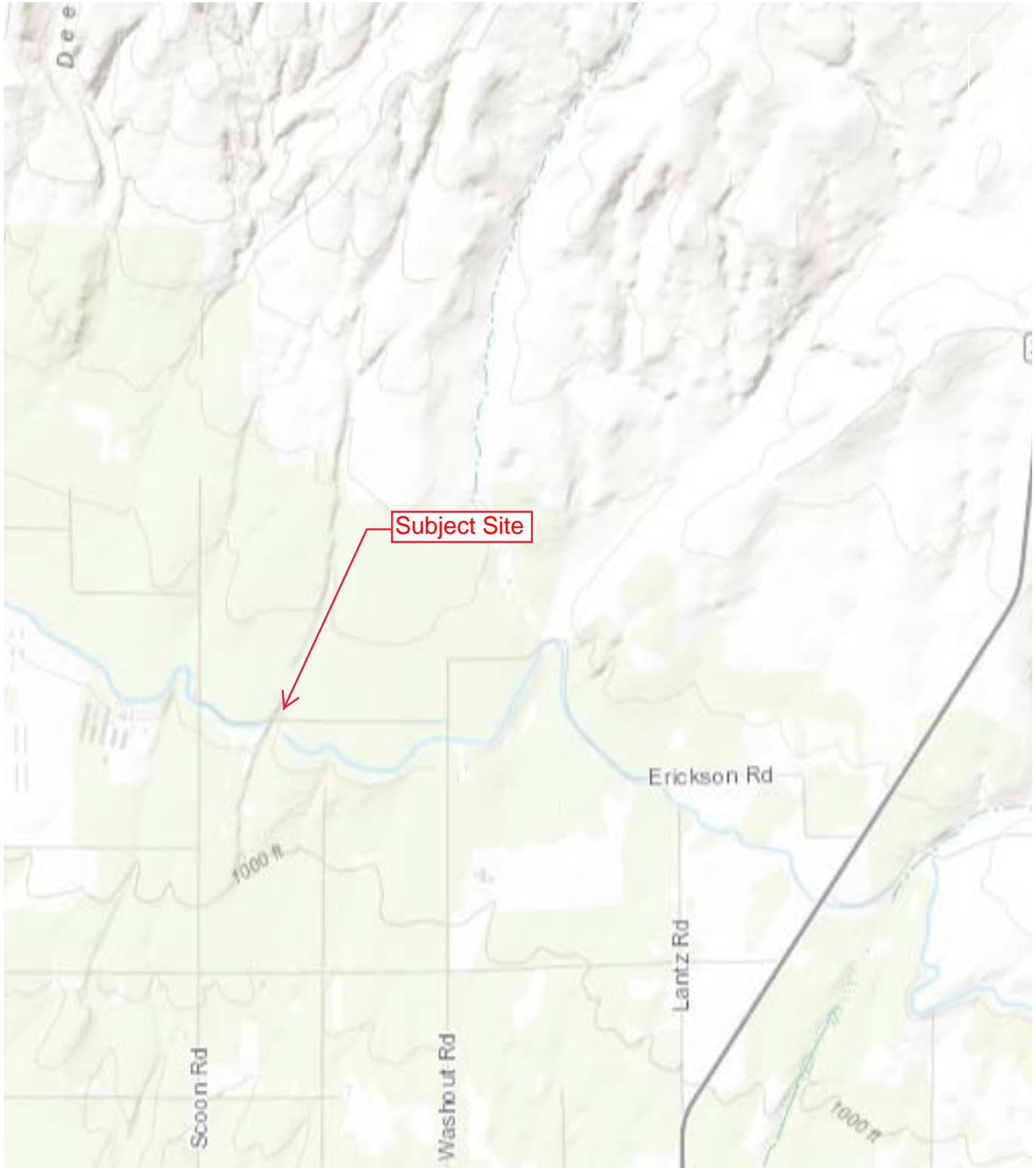
Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, U.S. Environmental Protection Agency, EPA SW-846.



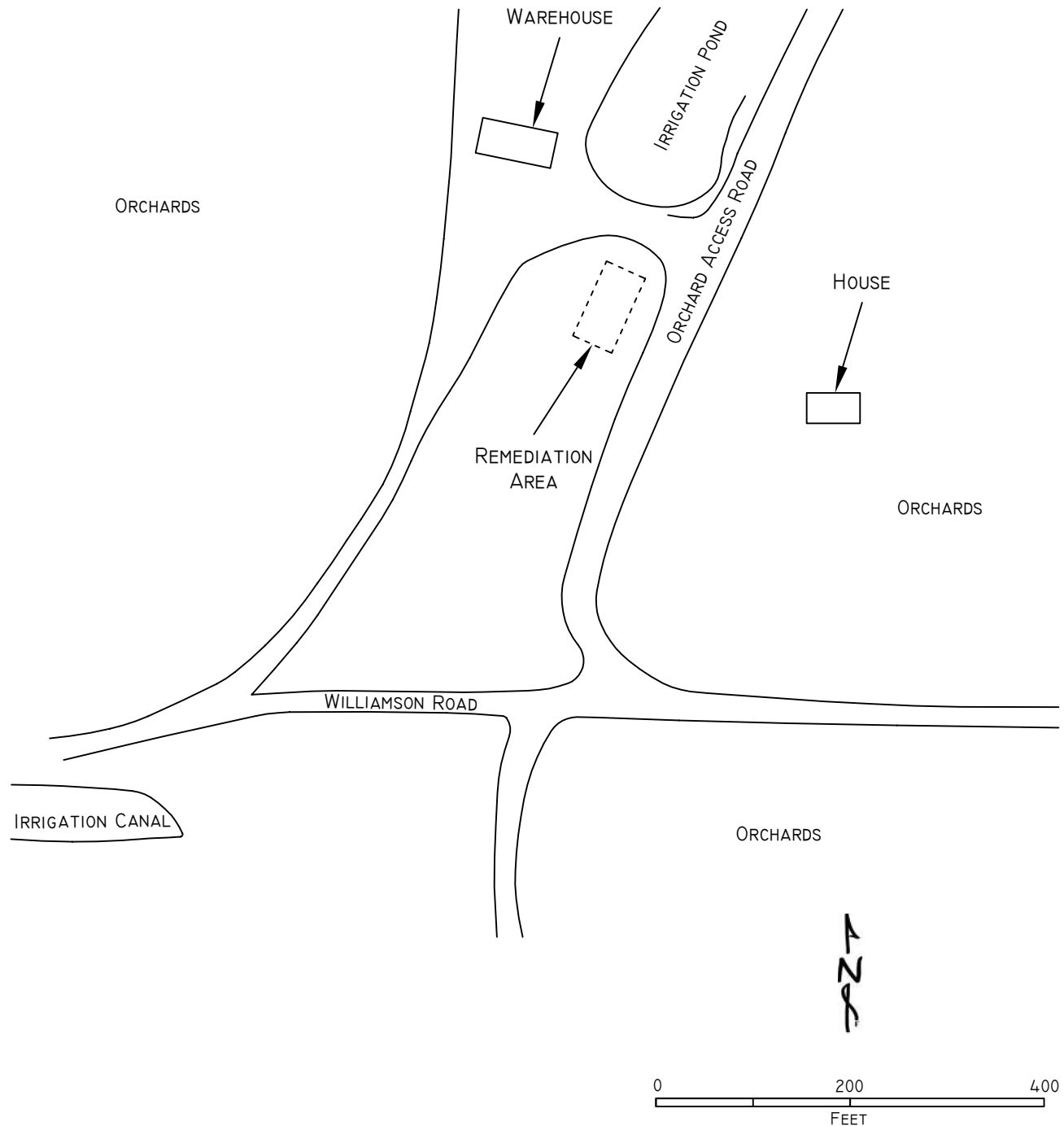
Figures

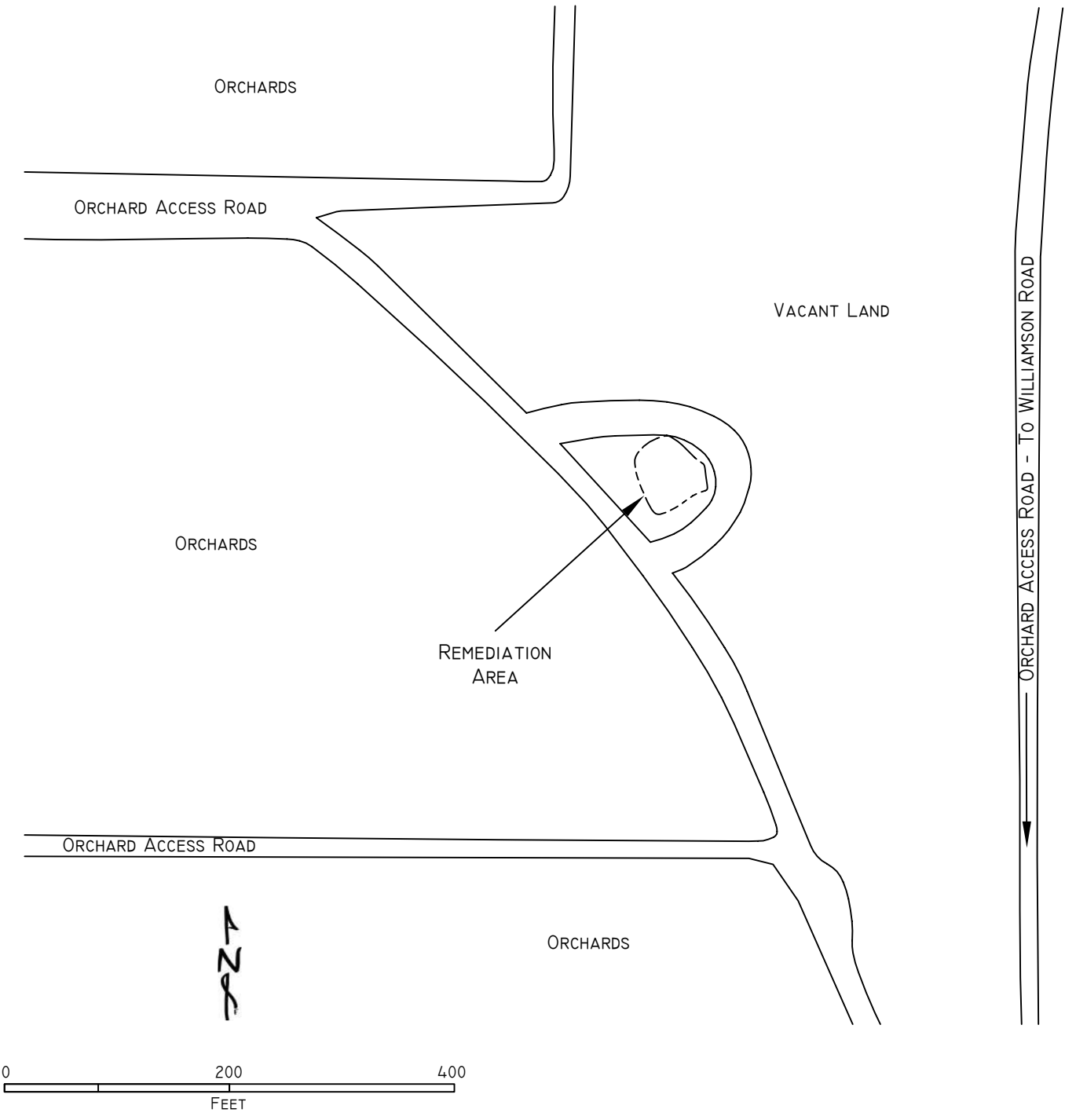
Figure 1: Site Location

Figure 2: Smudge Pot Excavation



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Appendix A

Field Form



Ranch _____

Address _____

Field Lead: _____

Start Date/Time: _____

End Date/Time: _____

Table 1: Laboratory Results

Contaminant	Present (Y/N)
Diesel	
Heavy Oil	
Metals	
PAHs	

Table 2: PCS

Dimension (approx.)	Feet
Length	
Width	
Depth	

Estimated Volume of PCS: _____

Trucks or Trucks & Trailer: _____

Loads (Est.)

Truck No.	Driver	Left (time)	How Full	Returned (time)

Sample Plan

Collect pit bottom samples at 1 per 500-square feet

AND If depth is 3-ft or more collect sidewalls at rate of 1 per 50-linear feet of sidewall

AND Duplicates at 10% of laboratory samples

Container	Per Location	Planned For Ranch	Actual Collected
4-ounce jars			
40-ml voa vials			

Laboratory Analysis

- Diesel and heavy oil by NWPTH – Diesel Extended (Dx)
- BTEX by EPA Method 8260
- PAHs by EPA Method 8270 – PM selection following review Dx results

Notes: _____

1					
2					
3					
4					
5					
6					

1					
2					
3					
4					
5					
6					



Appendix B

Project SAP / QAPP



Sampling & Analysis Plan
Quality Assurance Project Plan
Former Smudge Pot Storage
Area Remediation

Ranch 19
441 Williamson Road
Sunnyside, Washington

Project Number: 192902.15

December 17, 2019

Prepared for:

WA LAND MGMT, LLC
c/o: Guy Kisling
22605 Southeast 56th Street #200
Issaquah, Washington 98029

Prepared by:

Fulcrum Environmental Consulting, Inc.
406 North 2nd Street
Yakima, Washington 98901



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1.0 Data Quality Objectives

The primary goal of this project is to accurately define magnitudes and extents of impact of petroleum hydrocarbons and other constituents in site soils post-remedial excavation. To do this, samples collected must be representative of site soil conditions. Variations in the level of site soil impact can occur due to natural environmental heterogeneity or may be caused by the sampling and analytical procedures, or sample collection and handling methods.

For this project to succeed, the precision (random error) and bias (systematic error) of the sample results must be low to reveal variability in concentrations between samples. Standard procedures will be used when collecting and handling soil samples to minimize any bias caused by the sampling process.

The precision and bias routinely obtained by the project laboratory for the selected analytical methods will meet the measurements quality objectives (MQOs) for this project. Table 1 lists the MQOs for assessing project data quality. Recovery limits (RL) and method reporting limit (MRL) are a function of the analytical methodology, laboratory equipment and concentration of other analytes in the sample. For instance, a sample with an appropriate methodology, sensitive laboratory equipment and very low or non-detect concentrations of analytes will typically achieve an exceptionally low MRL, often more than an order of magnitude below the MTCA cleanup regulations as the selected regulatory cleanup values. However, the same sample with a mixture of similar analytes may result in interferences among like analytes or sample dilution may result in significantly higher MRLs. As such, MRLs on samples collected during an investigation are likely to vary in RL and MRL.

These MQOs are based on adequacy and completeness of field sampling and performance characteristics of measurements done by the project laboratory.

Table 1: Laboratory Analyte MQOs for Soil Analysis

Analyte	Reporting Limit (mg/Kg)	LCS % Recovery Limits		Duplicate % RPD Limits	MS / MSD % recovery limits	
Petroleum Range Hydrocarbons						
Diesel by NWTPH-DxExt	20	65	135	30	65	135
Heavy Oil by NWTPH-DxExt	50	NA	NA	NA	NA	NA
Volatile Organic Compounds by EPA Method 8260						
Benzene	0.02	64.3	133	30	63.5	133
Ethylbenzene	0.025	74	129	30	54.5	134
m,p-Xylene	0.05	70	124	30	53.1	132
o-Xylene	0.025	68.1	139	30	53.3	139
Toluene	0.02	67	144	30	63.4	132

mg/Kg milligrams per kilogram

LCS Laboratory Control Standard

RPD Relative Percent Difference

NA Not Applicable



Should additional analysis beyond those specified in Table 1 be required, all additional analysis will be completed within applicable MQOs as appropriate for the selected methodologies to meet both analysis method and regulatory requirements.

2.0 Sampling Procedures

Soil sampling procedures were selected based upon observed and anticipated field conditions. Sampling will be consistent with Environmental Protection Agency (EPA) protocols as set forth in the document titles, *Preparation of Soil Sampling Protocols: Sampling Techniques and Strategies*. Additionally, all soil samples for volatile analysis will be collected per Ecology's *Technical Memorandum #5: Collecting and Preserving Soil Samples for VOC Analysis*. Specific analytes will be selected based on Ecology's published document titled, *Guidance for Remediation of Petroleum Contaminated Sites, Publication 10-09-057*, Revised June 2016.

The following is a summary of collection procedures anticipated for soil sampling and a summary of sample preparation for sample analysis and decontamination procedures.

2.1 Sampling Procedure for Soils

Soil samples collected from excavation extents will be obtained by direct collection from the desired location if accessible, otherwise collected from the excavator bucket. Samples will be collected at locations and elevations with the highest field indicators of impact during remedial excavation. All samples will be collected by hand using new nitrile gloves.

Samples will be collected into labeled, 4-ounce borosilicate sample jars. The number of sample containers at each location will be determined by sample location and analyses to be performed.

Each 40-milliliter vial sample utilized for EPA Method 8260 analysis will be collected using an impinger sampler to minimize loss of volatile organic compounds. Disposable, single-use impingers are utilized to collect a measured soil sample of undisturbed soil. Following each sample collection, the sample will be immediately placed into a new 40-milliliter glass vial with Teflon-lined lid. Consistent with Ecology guidance, sample preparation, including extraction by Methanol will be completed at the laboratory within 48-hours of sample collection. If laboratory provided methanol preserved sample vials are used, samples will be analyzed within 14-days of collection.

Field collected samples will be divided into two portions. The first portion will be placed in a clean, appropriately sized sample jar or vial and immediately placed on ice for laboratory analysis. The second portion of the sample will be placed in a re-closeable plastic bag for field screening.

Field screening will include observation, sheen analysis and/or headspace sampling. Observation refers to visual/olfactory observation of the sample for obvious indications of contamination. Sheen analysis involves dropping a small volume of sample into a container of clean water and observing any resulting sheen produced on the water surface. Headspace sampling is a measurement of the relative concentration



of volatile organic carbons (VOCs) in the soil sample headspace. For headspace sampling, the sample will remain in the sealed plastic bag for approximately 10 minutes in a warm area to promote volatilization. The probe of a photo-ionization detector (PID) will then be inserted into the bag and the highest response will be recorded for each sample. The intent of field screening for VOCs is limited to identification of presence of elevated concentrations only in order to assist with efficient selection of soil samples for laboratory analysis and is not intended to be utilized to document VOC concentrations, absence of impact or correlation of field screening data with laboratory analysis results.

Record of physical description of the soil including grain proportions, color, odor, location, condition, etc. will be completed in the field.

2.2 Sample Preparation for Various Analytical Methods

The following general procedures will be used during sample collection and preparation. Wear new disposable protective gloves during sampling activities. Preserve samples and adhere to holding times as described in Table 2 as required by the analytical method being requested. Check the sample lid to ensure cleanliness and that it is secured. Carefully label the sample container with the appropriate information. Use only waterproof ink to complete sample container labels. After label information has been completed, secure labels to the sample container by wrapping clear tape over the label and around the container. Transfer samples to a cooler. Preserve samples in the field on ice at 4° Celsius pending preparation for field analysis or shipping to the analytical laboratory.

At a minimum, the following information will be recorded in the field logbook:

1. Sample location designation
2. Sampling location condition and pertinent observations of surrounding area
3. Weather conditions
4. Manufacturer, model number and calibration results of meters/instruments used to measure field parameters
5. Soil color, grain size, and visual and olfactory indications of contamination
6. Soil sample interval/depth
7. Time of sample collection
8. Initials of samplers
9. Laboratory analysis to be performed
10. Any miscellaneous comments or observations

The following field information will additionally be included on the chain-of-custody forms:

1. Sample identification
2. Time of sample collection
3. Initials of samplers
4. Laboratory analysis to be performed
5. Any miscellaneous comments or observations



2.3 Decontamination

Every effort will be made to minimize the need for decontamination of sampling equipment through the use of dedicated sampling equipment (i.e. bowls, spoons, etc.): however, the use of non-dedicated sampling equipment (i.e., hand trowels, hand augers, split spoons, etc.) may be required in some locations. In these cases, the non-dedicated sampling equipment will be decontaminated prior to each use. Field equipment, that directly contacts samples or sample containers, will be decontaminated prior to use and between each sampling event. The following procedures will be used to prevent cross contamination of samples collected during this project.

Gross contamination will be removed by dry brushing or wiping the equipment with disposable toweling. Field equipment will then be washed in a solution of Alconox™, Liquinox™ or comparable non-hazardous laboratory detergent product and deionized water. Washed equipment will be double rinsed with deionized water. Rinsate will be discharged to the sample collection location. Field equipment will then be placed on clean aluminum foil or similar material.

All sample containers will be pre-cleaned as required by EPA guidance titled, *Test Methods for Evaluating Solid Waste* (SW-846); Standard Methods for the Examination of Water and Wastewater; and laboratory QA/QC protocol by the container manufacturer or selected analytical laboratory prior to shipping for sample collection. Sample containers will not be used for sample collection and storage without being certified clean by the manufacturer or analytical laboratory.

After the sample is collected and the container lids are tightly sealed, the exterior portion of the sample container will be cleaned. Care will be taken to ensure that sample labels remain legible during the exterior container cleaning.

2.4 Soil Sample Containers, Preservation, and Holding Time Requirements

Required sample containers, preservation methods, and holding times for the analytical parameters selected are summarized in Table 2. Analytical precision and accuracy are defined by the analytical test methodology and the project laboratory's QA/QC program. All analytical method accuracy, precision, and detection limits are within laboratory certification requirements and below the associated selected contaminant concentration cleanup values as established under MTCA Method A, or default Method B levels where Method A levels have not been established.

Table 2 presents the sample types, location, analytical parameters and methods, sample preservation, and specific requirements for sample container size and type for sample collected. Table 3 summarizes the number of QA/QC samples to be submitted according to method requirements.



Table 2: Soil Sample Type, Analytical Parameters, Preservation and Holding Times

Analytical Parameter and Method	Sample Preservation	Sample Containers, Other Comments	Maximum Holding Time
Diesel and Heavy Oil by NWTPH-DxExt	Cool to 4° C	4 oz. glass jar with Teflon lined lid	Preserve within 14 days, Analyze within 40 days
Volatile Organic Compounds by EPA Method 8260	Cool to 4° C	Two, 40-millimeter glass with septum lid	Preserve with 48-hours, Analyze within 14-days

Table 3: QA/QC Requirements for Soil Analysis

Analytical Parameter and Method	Total Field Samples ^a /Containers	QA/QC Sample Summary Analyses/Containers			
		Organic MS/MSD	Inorganic MS/MSD	Rinsate Blanks ^b	Trip Blanks
Diesel by NWTPH-Dx	# + d	2/2	NA	None	None
Volatile Organic Compounds by EPA Method 8260	# + d	1/1	NA	None	None

^a Total number of field samples are estimated.

^b Rinsate blanks only required for 1 in 20 samples per non-dedicated sampling device.

NA Not Applicable

d Duplicate Sample

One duplicate sample will be collected for each analytical methodology at the ranch.

2.5 Investigation Derived Wastes

Every effort will be made to minimize generation of investigation derived wastes (IDW) that cannot be disposed of as solid waste. All extra soil volume collected for a sample will remain at the sampling location. Disposable personal protective equipment and sampling equipment will double bagged in plastic garbage bags, labeled and disposed of at an approved solid waste facility.

2.6 Sample Handling and Custody Requirements

The project laboratory will provide sample containers for sample collection, and chain-of-custody forms. Each sample will be placed in the appropriate documented clean, laboratory provided container and sealed. Disposable nitrile gloves will be worn during the sampling process. Gloves will be changed between sample areas or if the gloves have been damaged in any manner. Sample documentation will be completed immediately following sample collection. The chain-of-custody forms will be filled out in ink and placed in a re-sealable plastic bag to avoid damage. Duplicates will be maintained in Fulcrum's files. The original will be sent to the analytical laboratory. The forms will include the date, site designation, sample designation, analysis required, turn-around-time, preservation and authorized signatures.

Each sample will have a unique identification number. The specific designation for sample codes is presented in Table 4 and is based on the date, sample location identification, sample matrix and consecutive sample number. At a minimum, label information will include:



1. Initials of the collector
2. Date and time of collection
3. Location
4. Sample number

A chain-of-custody record will be filled out and accompany each sample to document sample possession from collection through analytical reporting. A copy of this record will be maintained with analytical results and be included in subsequent data reporting.

Table 4: Sample Coding

Ranch Number	Sample Type	Consecutive Sample Number (assigned sequentially)	Sample Interval (depth in feet below ground surface)	Example
##	Date	01-20	0.01 (1-foot), .02 (2-feet), etc. bgs	R##-010120-01.01

Samples destined for analysis by an offsite laboratory will be cold transported in a cooler. Packaging and shipping of sample for analyses and storage will be per the following protocol:

1. Roughly 2 inches of cushioning material will be placed in the bottom of the cooler
2. Sample containers will be placed in the cooler in a manner to prevent breakage
3. Glass jars will be placed in re-sealable plastic bags and centered in the cooler to prevent breakage
4. Samples will be packaged with ice enclosed in re-sealable plastic bags or freeze packs (“blue ice”)
5. QA/QC samples will be packaged with the samples that were collected that day
6. Free space in the cooler will be filled with cushioning material
7. Chain-of-custody paper work will be placed in plastic bags and placed inside the cooler
8. Cooler will be wrapped with strapping tape and signed custody seal(s) will be used to secure the cooler lid
9. Samples will be shipped by commercial carrier for next day delivery. However, samples will not be shipped on Fridays, weekends, or immediately preceding a holiday, due to next day delivery limitations
10. Use of separate coolers to protect more delicate sample containers, such as 40 milliliter vials, is encouraged

When delivery for a sample set is scheduled, the shipper will receive a copy of the shipping manifest/tracking number. The documentation will be placed in the project file.

Upon receipt of the shipping container, the laboratory will inspect the integrity of the shipping container seal. The cooler will be opened and the shipment checked against the chain-of-custody record. Any inconsistencies or problems with a sample shipment will be noted and resolved. Once at the laboratory, the samples will be tracked through the laboratory by internal custody procedures and the laboratory’s QA/QC procedures will be followed.



2.7 Inspection/Acceptance Requirements for Supplies and Consumables

Upon receipt, all supplies and consumable will be inspected for damage, including the shipping carton, individual packages and product integrity. Any product that is cracked, leaking or otherwise damaged or whose individual package is torn or opened to the environment will be discarded or returned.

A certificate indicating the sample container lot and statement that they have been cleaned in accordance to applicable standards will accompany each carton of new sample containers. A statement of cleaning will also be provided for sample containers that have been pre-cleaned and pre-preserved by the laboratory.

All reasonable effort will be made to ensure all sampling supplies and consumable are acquired prior to initiating field activities.

The following is a minimum list of supplies and consumable that will be required to conduct soil sampling:

1. Field notebook
2. Disposable nitrile gloves
3. Sampling equipment for soils (Hydraulic-push sampler, hand coring sampler, plastic spoons and bowls, stainless steel shovel, color chart for soil and water)
4. Camera
5. Sample containers: 4-ounce borosilicate with Teflon lined lids and 40 milliliter glass vials with septum lids
6. Sample labels
7. Ice or “Blue Ice” reusable packages
8. Chain-of-custody forms
9. Decontamination equipment (buckets, spray bottles, brushes, soap, etc.)
10. Deionized water
11. Insulated shipping containers (coolers or ice chests)

3.0 Measurement Procedures

3.1 Data Acquisition Requirements (Non-direct Measurements)

Non-direct data measurements are those items that require a subjective assessment. Items such as weather, problems with sample collection, etc. will be logged in the field notebook.

3.2 Data Management

Field data will be recorded in the field notebooks by, or under the supervision of a licensed Geologist. Daily observation reports will be generated by Fulcrum and submitted for internal review. Laboratory analytical reports will be transmitted to Fulcrum electronically. The project laboratory will review and validate analytical data in accordance with their internal QA/QC program.



All field notebooks and the project laboratory's analytical data will be reviewed by Fulcrum to assure that all pertinent information is accounted for and is correlated. Fulcrum will complete review of sample collection and laboratory analytical data and summarize the information in a database or report format.

Hard copies of all field notebooks, chain-of-custody forms, analytical data, laboratory reports, assessment reports and all electronic databases will be maintained by Fulcrum until project completion. Support and backup data will be archived for 5 years beyond completion of the project.

4.0 Sample Quality Control Requirements

4.1 Field QC Requirements

Field quality control will be maintained through the use of standard operating procedures for sample collection, handling and documentation. Any problems occurring during the sample process will be recorded in the field notebook or field datasheets.

Duplicate samples will be collected as part of sampling activities. The number, type and handling of QA/QC samples are specified in Table 3 for soil samples.

Duplicate samples are used to check the precision of field collection or laboratory analyses and verifies repeatability of the sample data. Duplicates are collected at the same time as the sample. The duplicate sample will be collected by evenly splitting the collected sample such that the both sub-samples are comparable and representative of the single sample. Duplicate soil samples will be collected from a sample location that is believed to have elevated levels of a particular compound.

4.2 Laboratory QA/QC Requirements

The selected project laboratory will be appropriately Ecology and EPA certified to complete the selected analysis.

Laboratory quality control tests consist of method blanks, matrix spikes, as well as duplicate and check standards (laboratory control standards). Surrogate recoveries will also be included for the organic analyses. Surrogate recoveries will be used to judge the accuracy for analysis of similar target analytes. Analytical precision can be estimated from duplicate and check standards, duplicate sample analysis and duplicate spiked sample analyses. Analytical bias will be estimated from matrix spikes, matrix spike duplicates and check standards. Recoveries from check standards provide an estimate of bias due to calibration. Mean percent recoveries of spiked sample analyses provide an estimate of bias due to interference.

The laboratory staff will report results of quality control analyses in the same units as expressed for the MQOs. They will also conduct quality assurance review of all analytical data generated at the project laboratory prior to releasing the data to the project manager.



The laboratory will be responsible for following their established QA/QC procedures and those required by the analytical methods. The following minimum QA/QC procedures will apply:

1. Sample holding and preservation requirements will be in accordance with analytical method reference parameters
2. Instrument tuning and calibration will be performed as required by the analytical method and equipment manufacturer
3. Laboratory QA/QC samples (duplicates) will be analyzed at frequencies specified by EPA, Ecology, and analytical reference methods
4. The laboratory will review the data package for performance, quality, and completeness
5. The method detection limit for the parameter analyzed will be below regulatory guidance levels
6. All laboratory parameters (recoveries, spikes, duplicates, etc.) are within their stated limits

Laboratory instrumentation will meet applicable calibration requirements to ensure that the instrumentation is capable of producing acceptable quantitative data. Initial calibration demonstrates that the instrument is capable of acceptable quantitative performance at the onset of analysis. Calibration during operation verifies acceptable performance of the instrument on a day-to-day basis. Tuning and instrument performance criteria will also be established, as appropriate, to ensure that instrument measurements may be interpreted correctly.

Laboratory calibration procedures are specified in the protocol for the specific analytical methods used. When there are no previously defined specifications, the calibration procedures will include:

- An initial and final three-point calibration before and after a run.
- A mid-range calibration after every tenth sample.

5.0 Data Management Procedures

At the completion of each sampling event, all field data and laboratory analytical data will be compiled and evaluated against the project MQOs.

Field methods and forms will be reviewed to ensure consistency. Field datasheets will be checked for missing or improbable measurements before leaving each site. Field data entered into spreadsheets or databases will be checked against the field datasheets for errors or omissions. Missing or unusual field parameter data will be omitted from the data set.

Field replicate variability will be evaluated by calculating the relative percent difference (RPD) for each duplicate set of samples and compared to the MQOs listed in Table 1.

Laboratory-generated data review and reporting will follow the procedures outlined in the laboratory's quality assurance program. Results will be checked for missing or questionable data. Individual data which fails to achieve QA/QC objectives will be flagged with appropriate qualifiers and their use restricted as



appropriate. A standard case narrative of laboratory QA/QC results will be issued by the laboratory for each sampling event.

If the data review and verification suggest significant problems with QA/QC for a sample event, the sample event or individual sample may be reanalyzed by the laboratory or resampled as necessary.

6.0 Audits and Reports

The project laboratory participates in performance and system audits of their routine procedures and is an environmental laboratory accredited by the Washington State Department of Ecology as of July 9, 2019. See the following link for accreditations associated with Fremont Analytical:

<https://fortress.wa.gov/ecy/laboratorysearch/SearchLabName.aspx>

Results of the laboratory's performance and system audits of their routine procedures are available from the laboratory on request.

7.0 Data Verification and Validation

As part of data review, field notes and data from the laboratory will be reviewed for errors and omissions and to ensure that data are correct, complete, meet investigation objectives, and are consistent. Other items that will be reviewed include:

- Results for quality control samples described in Quality Control section of this document accompany sample results
- Quality control results indicate that acceptance criteria were met
- Data qualifiers are properly assigned where necessary
- Data specified in the Sampling Design section above were obtained
- Methods and protocols specified in this QAPP were followed

After receiving the data package, Fulcrum will verify that the results have met the MQOs for bias, precision and accuracy. Precision will be estimated by calculating the RPD for the field duplicate results. Analytical bias is assumed to be within acceptable limits if laboratory quality control limits are met for blanks, matrix spikes and check standards. Overall accuracy will be assessed by comparing the measured result with the true value of the blind reference sample. If appropriate, sampling procedures, quality control steps or analytical procedures will be modified to address identified problems.

Once the data have been reviewed, verified and validated, the project manager will determine if the data can be used toward the project goals and objectives. A technical report will be prepared at the completion of all sampling and will include the following:



- Maps of the investigation area showing site features, soil and groundwater sample locations, water levels, groundwater flow direction, contaminant concentrations and distribution
- Description of field and laboratory methods
- Discussion of data quality and the significance of any problems encountered
- Summary tables of field and analytical data
- Discussion of water quality results. Significant or potentially significant findings
- Recommendations based on project goals if appropriate

8.0 References

D3370-18: Standard Practices for Sampling Water, ASTM Standards on Environmental Sampling, Designation: Pages 110-116, 2018.

EPA Requirements for Quality Assurance Project Plans, EAP QA/R-5, EPA/240/B-01/003, U. S. Environmental Protection Agency, March 2001.

Guidance for Quality Assurance Project Plans, EAP QA/G-5, EPA/240/R-02/009, U. S. Environmental Protection Agency, December 2002.

Guidance for Data Quality Assessment – Practical Methods for Data Analysis, U.S. Environmental Protection Agency, EPA 600/R-96/084, EPA EZ/G9, QA97 Version, January 1998.

Guidance for Remediation of Petroleum Contaminated Sites, Washington State Department of Ecology, Publication 10-09-057, November 2010, revised June 2016.

Model Toxics Control Act, Washington State Department of Ecology, Washington Administrative Code 173-340.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, U.S. Environmental Protection Agency, EPA SW-846.



Appendix C

Site Photographs



Looking southeast - excavation extent with average excavation depth of approximately 1 to 2 feet bgs.



Looking southeast - central area of excavation to depth of approximately 3 to 4 feet bgs.



Localized area within central portion of excavation, approximately 5 to 6 feet bgs.



Looking east - final excavation extent.



Appendix D

Soil Treatment Receipts

JUN 29 2020



Yakima Health District
1210 Ahtanum Ridge Drive
Union Gap, Washington 98903
Phone (509) 575-4040

June 18, 2020

Mr. Jeremy Lynn
C/O Fulcrum Environmental Services
406 North 2nd Street
Yakima, WA 98901

RE: WA Land Management, Ranches 16 East, 19 East, 19 West, 36 and 47, Yakima County, WA : Petroleum Contaminated Soil

Mr. Jeremy Lynn,

This office has reviewed the data on the above mentioned project. The data submitted indicates that the contaminant which requires remediation is diesel. Based on the data submitted it has been determined that the soil may be processed as one batch at the Anderson PCS Facility provided that all handling is in accordance with the procedure that has been approved by this office and Washington State Department of Ecology. This letter is to notify you that currently the soil will be considered to be stored on the property and no treatment can begin until the total fee is paid. Waste material may be stored for up to 90 days. Anderson PCS Facility will notify me of the total number of tons delivered for treatment and I will bill you for the remainder of the fee at that time.

FEE ACCOUNT:

Fulcrum Environmental Services

PROJECT NAME:

19 East, 19 West, 36 and 47

WA Land Management, Ranches 16 East,

Yakima County
, WA

PRE-TREATMENT AUTHORIZATION:

(Based on time spent prior to soil delivery
to the site at \$141/hour)

TONNAGE FEE AT \$0.60 PER TON:

To be determined after delivery

BALANCE OWED:

To be billed after delivery

If you have any questions regarding this letter, please contact me at (509) 249-6562.

Sincerely,

Ted Silvestri, RS
Environmental Health Specialist

cc: Anderson PCS Facility

DTG Enterprises Inc.

PO Box 14203

Mill Creek, WA 98082

425-549-3000

Invoice

Date	Invoice #
10/19/2020	130380

Bill To:
WA. LAND MGMT. LLC. 22605 SE 56TH Street Suite 200 Issaquah, WA 98029

Please make checks payable to "DTG Enterprises Inc."	
Terms	Due Date
Net 30	11/18/2020

E-mail
accounting@dtgrecycle.com

All Past Due Invoices Are Subject to Finance Charges & Late Fees Computed at 1.5% Per Month 18% Per Annum

Item	Date	Description	Quantity	Rate	Amount
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PCS - Petroleu...	10/22/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523160	23.33	30.00	699.90T
PCS - Petroleu...	10/22/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523189 / RANCH 19	23.53	30.00	705.90T
PCS - Petroleu...	10/22/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523185 / RANCH 19	24.81	30.00	744.30T
PCS - Petroleu...	10/23/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523203 / RANCH 19	22.54	30.00	676.20T
PCS - Petroleu...	10/23/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523218 / RANCH 19	21.79	30.00	653.70T
		Refuse Collection Tax		3.60%	1,626.50

In September 2020, DTG produced enough renewable biomass fuel from recycled urban wood waste to power 2,149 homes for an entire year	Total	\$46,807.10
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10/22/20 with Quantity of
23.33 is equally split
between West and East.

DTG Enterprises Inc.

PO Box 14203

Mill Creek, WA 98082

425-549-3000

Invoice

Date	Invoice #
10/26/2020	131159

Bill To:
WA. LAND MGMT. LLC. 22605 SE 56TH Street Suite 200 Issaquah, WA 98029

Please make checks payable to "DTG Enterprises Inc."	
Terms	Due Date
Net 30	11/25/2020

E-mail
accounting@dtgrecycle.com

All Past Due Invoices Are Subject to Finance Charges & Late Fees Computed at 1.5% Per Month 18% Per Annum

Item	Date	Description	Quantity	Rate	Amount
PCS - Petroleu...	10/26/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523299 / RANCH 19 EAST	25.93	30.00	777.90T
PCS - Petroleu...	10/26/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523298 / RANCH 19 EAST	28.24	30.00	847.20T
PCS - Petroleu...	10/26/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523296 / RANCH 19 EAST	26.56	30.00	796.80T
PCS - Petroleu...	10/26/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523301 / RANCH 19 EAST	21.77	30.00	653.10T
PCS - Petroleu...	10/26/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523319 / RANCH 19 EAST	26.4	30.00	792.00T
PCS - Petroleu...	10/26/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523316 / RANCH 19 EAST	28.53	30.00	855.90T
PCS - Petroleu...	10/26/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523327 / RANCH 19 EAST	24.41	30.00	732.30T
PCS - Petroleu...	10/26/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523332 / RANCH 19 EAST	21.76	30.00	652.80T
PCS - Petroleu...	10/26/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523323 / RANCH 19 EAST	26.91	30.00	807.30T
PCS - Petroleu...	10/26/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523342 / RANCH 19 EAST	25.51	30.00	765.30T
PCS - Petroleu...	10/26/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523348 / RANCH 19 EAST	27.03	30.00	810.90T
PCS - Petroleu...	10/26/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523365 / RANCH 19 EAST	23.17	30.00	695.10T
PCS - Petroleu...	10/27/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523449 / RANCH 19 EAST	24.08	30.00	722.40T
PCS - Petroleu...	10/27/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523446 / RANCH 19 EAST	24.92	30.00	747.60T
PCS - Petroleu...	10/27/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523429 / RANCH 19 EAST	23.88	30.00	716.40T
PCS - Petroleu...	10/27/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523411 / RANCH 19 EAST	22.96	30.00	688.80T
PCS - Petroleu...	10/27/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523407	26.07	30.00	782.10T
PCS - Petroleu...	10/27/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523408 / RANCH 19 EAST	19.87	30.00	596.10T
PCS - Petroleu...	10/27/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523404 / RANCH 19 EAST	28.6	30.00	858.00T

In September 2020, DTG produced enough renewable biomass fuel from recycled urban wood waste to power 2,149 homes for an entire year

Total

DTG Enterprises Inc.

PO Box 14203

Mill Creek, WA 98082

425-549-3000

Invoice

Date	Invoice #
10/26/2020	131159

Bill To:
WA. LAND MGMT. LLC. 22605 SE 56TH Street Suite 200 Issaquah, WA 98029

Please make checks payable to "DTG Enterprises Inc."	
Terms	Due Date
Net 30	11/25/2020

E-mail
accounting@dtgrecycle.com

All Past Due Invoices Are Subject to Finance Charges & Late Fees Computed at 1.5% Per Month 18% Per Annum

Item	Date	Description	Quantity	Rate	Amount
PCS - Petroleu...	10/27/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523393 / RANCH 19 EAST	24.93	30.00	747.90T
PCS - Petroleu...	10/27/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523383 / RANCH 19 EAST	25.41	30.00	762.30T
PCS - Petroleu...	10/27/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523385 / RANCH 19 EAST	25.42	30.00	762.60T
PCS - Petroleu...	10/27/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523442 / RANCH 19 EAST	25.76	30.00	772.80T
PCS - Petroleu...	10/27/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523451 / RANCH 19 EAST	20.99	30.00	629.70T
PCS - Petroleu...	10/27/2020	Petroleum contaminated soil per ton or \$1,500 inimum - TKT#523475 / RANCH 19 EAST	23.73	30.00	711.90T
PCS - Petroleu...	10/27/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523486 / RANCH 19 EAST	27.71	30.00	831.30T
PCS - Petroleu...	10/28/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523562 / RANCH 19 EAST	26.21	30.00	786.30T
PCS - Petroleu...	10/28/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523555 / RANCH 19 EAST	24.72	30.00	741.60T
PCS - Petroleu...	10/28/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523507 / RANCH 19 EAST	28.45	30.00	853.50T
PCS - Petroleu...	10/28/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523508 / RANCH 19	22.37	30.00	671.10T
PCS - Petroleu...	10/28/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523619 / RANCH 19	26.99	30.00	809.70T
PCS - Petroleu...	10/28/2020	Petroleum contaminated soil per ton or \$1,500 minimum - TKT#523631 / RANCH 19	21.63	30.00	648.90T
		Refuse Collection Tax		3.60%	864.99
In September 2020, DTG produced enough renewable biomass fuel from recycled urban wood waste to power 2,149 homes for an entire year			Total		\$24,892.59



Appendix E

Laboratory Results



Fremont
Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Fulcrum Environmental

Ryan Mathews
406 N. 2nd Street
Yakima, WA 98901

RE: Ranch 19 East

Work Order Number: 2010457

November 04, 2020

Attention Ryan Mathews:

Fremont Analytical, Inc. received 9 sample(s) on 10/28/2020 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample Moisture (Percent Moisture)

Volatile Organic Compounds by EPA Method 8260D

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Original

www.fremontanalytical.com

CLIENT: Fulcrum Environmental
Project: Ranch 19 East
Work Order: 2010457

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2010457-001	R19E-102720-01.2	10/27/2020 9:35 AM	10/28/2020 9:28 AM
2010457-002	R19E-102720-02.5.5	10/27/2020 9:45 AM	10/28/2020 9:28 AM
2010457-003	R19E-102720-03.3	10/27/2020 9:55 AM	10/28/2020 9:28 AM
2010457-004	R19E-102720-04.2.5	10/27/2020 10:30 AM	10/28/2020 9:28 AM
2010457-005	R19E-102720-05.2	10/27/2020 10:15 AM	10/28/2020 9:28 AM
2010457-006	R19E-102720-06.2	10/27/2020 10:20 AM	10/28/2020 9:28 AM
2010457-007	R19E-102720-07.2	10/27/2020 10:23 AM	10/28/2020 9:28 AM
2010457-008	R19E-102720-08.3	10/27/2020 10:53 AM	10/28/2020 9:28 AM
2010457-009	R19E-102720-09.3	10/27/2020 11:00 AM	10/28/2020 9:28 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

CLIENT: Fulcrum Environmental
Project: Ranch 19 East

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Analytical Report

Work Order: 2010457

Date Reported: 11/4/2020

Client: Fulcrum Environmental

Collection Date: 10/27/2020 9:35:00 AM

Project: Ranch 19 East

Lab ID: 2010457-001

Matrix: Soil

Client Sample ID: R19E-102720-01.2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 30217

Analyst: DW

Diesel (Fuel Oil)	ND	18.7		mg/Kg-dry	1	10/31/2020 4:55:52 AM
Heavy Oil	ND	46.8		mg/Kg-dry	1	10/31/2020 4:55:52 AM
Surr: 2-Fluorobiphenyl	68.4	50 - 150		%Rec	1	10/31/2020 4:55:52 AM
Surr: o-Terphenyl	84.8	50 - 150		%Rec	1	10/31/2020 4:55:52 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262

Analyst: KT

Benzene	ND	0.0247		mg/Kg-dry	1	11/3/2020 12:33:30 PM
Toluene	ND	0.0247		mg/Kg-dry	1	11/3/2020 12:33:30 PM
Ethylbenzene	ND	0.0309		mg/Kg-dry	1	11/3/2020 12:33:30 PM
m,p-Xylene	ND	0.0617		mg/Kg-dry	1	11/3/2020 12:33:30 PM
o-Xylene	ND	0.0309		mg/Kg-dry	1	11/3/2020 12:33:30 PM
Surr: Dibromofluoromethane	96.9	85.2 - 113		%Rec	1	11/3/2020 12:33:30 PM
Surr: Toluene-d8	99.0	88.5 - 110		%Rec	1	11/3/2020 12:33:30 PM
Surr: 1-Bromo-4-fluorobenzene	97.1	88.6 - 109		%Rec	1	11/3/2020 12:33:30 PM

Sample Moisture (Percent Moisture)

Batch ID: R63094

Analyst: RL

Percent Moisture	9.69	0.500		wt%	1	11/3/2020 2:01:34 PM
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Analytical Report

Work Order: 2010457

Date Reported: 11/4/2020

Client: Fulcrum Environmental

Collection Date: 10/27/2020 9:45:00 AM

Project: Ranch 19 East

Lab ID: 2010457-002

Matrix: Soil

Client Sample ID: R19E-102720-02.5.5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 30217

Analyst: DW

Diesel (Fuel Oil)	ND	17.2		mg/Kg-dry	1	10/31/2020 5:25:37 AM
Heavy Oil	ND	43.0		mg/Kg-dry	1	10/31/2020 5:25:37 AM
Surr: 2-Fluorobiphenyl	59.3	50 - 150		%Rec	1	10/31/2020 5:25:37 AM
Surr: o-Terphenyl	76.6	50 - 150		%Rec	1	10/31/2020 5:25:37 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262

Analyst: KT

Benzene	ND	0.0238		mg/Kg-dry	1	11/3/2020 1:34:26 PM
Toluene	ND	0.0238		mg/Kg-dry	1	11/3/2020 1:34:26 PM
Ethylbenzene	ND	0.0297		mg/Kg-dry	1	11/3/2020 1:34:26 PM
m,p-Xylene	ND	0.0594		mg/Kg-dry	1	11/3/2020 1:34:26 PM
o-Xylene	ND	0.0297		mg/Kg-dry	1	11/3/2020 1:34:26 PM
Surr: Dibromofluoromethane	95.2	85.2 - 113		%Rec	1	11/3/2020 1:34:26 PM
Surr: Toluene-d8	99.7	88.5 - 110		%Rec	1	11/3/2020 1:34:26 PM
Surr: 1-Bromo-4-fluorobenzene	92.1	88.6 - 109		%Rec	1	11/3/2020 1:34:26 PM

Sample Moisture (Percent Moisture)

Batch ID: R63094

Analyst: RL

Percent Moisture	3.03	0.500		wt%	1	11/3/2020 2:01:34 PM
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Analytical Report

Work Order: 2010457

Date Reported: 11/4/2020

Client: Fulcrum Environmental

Collection Date: 10/27/2020 9:55:00 AM

Project: Ranch 19 East

Lab ID: 2010457-003

Matrix: Soil

Client Sample ID: R19E-102720-03.3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.</u>				Batch ID: 30217		Analyst: DW
Diesel (Fuel Oil)	ND	20.7		mg/Kg-dry	1	10/31/2020 5:55:15 AM
Heavy Oil	ND	51.8		mg/Kg-dry	1	10/31/2020 5:55:15 AM
Surr: 2-Fluorobiphenyl	53.4	50 - 150		%Rec	1	10/31/2020 5:55:15 AM
Surr: o-Terphenyl	72.4	50 - 150		%Rec	1	10/31/2020 5:55:15 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262 Analyst: KT

Benzene	ND	0.0238		mg/Kg-dry	1	11/3/2020 2:04:51 PM
Toluene	ND	0.0238		mg/Kg-dry	1	11/3/2020 2:04:51 PM
Ethylbenzene	ND	0.0297		mg/Kg-dry	1	11/3/2020 2:04:51 PM
m,p-Xylene	ND	0.0595		mg/Kg-dry	1	11/3/2020 2:04:51 PM
o-Xylene	ND	0.0297		mg/Kg-dry	1	11/3/2020 2:04:51 PM
Surr: Dibromofluoromethane	95.4	85.2 - 113		%Rec	1	11/3/2020 2:04:51 PM
Surr: Toluene-d8	99.4	88.5 - 110		%Rec	1	11/3/2020 2:04:51 PM
Surr: 1-Bromo-4-fluorobenzene	94.4	88.6 - 109		%Rec	1	11/3/2020 2:04:51 PM

Sample Moisture (Percent Moisture)

Batch ID: R63094 Analyst: RL

Percent Moisture	12.2	0.500		wt%	1	11/3/2020 2:01:34 PM
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Client: Fulcrum Environmental

Collection Date: 10/27/2020 10:30:00 AM

Project: Ranch 19 East

Lab ID: 2010457-004

Matrix: Soil

Client Sample ID: R19E-102720-04.2.5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.</u>				Batch ID: 30217		Analyst: DW
Diesel (Fuel Oil)	ND	20.0		mg/Kg-dry	1	10/31/2020 6:25:00 AM
Heavy Oil	ND	49.9		mg/Kg-dry	1	10/31/2020 6:25:00 AM
Surr: 2-Fluorobiphenyl	50.7	50 - 150		%Rec	1	10/31/2020 6:25:00 AM
Surr: o-Terphenyl	72.4	50 - 150		%Rec	1	10/31/2020 6:25:00 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262 Analyst: KT

Benzene	ND	0.0224		mg/Kg-dry	1	11/3/2020 2:35:17 PM
Toluene	ND	0.0224		mg/Kg-dry	1	11/3/2020 2:35:17 PM
Ethylbenzene	ND	0.0280		mg/Kg-dry	1	11/3/2020 2:35:17 PM
m,p-Xylene	ND	0.0560		mg/Kg-dry	1	11/3/2020 2:35:17 PM
o-Xylene	ND	0.0280		mg/Kg-dry	1	11/3/2020 2:35:17 PM
Surr: Dibromofluoromethane	95.3	85.2 - 113		%Rec	1	11/3/2020 2:35:17 PM
Surr: Toluene-d8	100	88.5 - 110		%Rec	1	11/3/2020 2:35:17 PM
Surr: 1-Bromo-4-fluorobenzene	94.8	88.6 - 109		%Rec	1	11/3/2020 2:35:17 PM

Sample Moisture (Percent Moisture)

Batch ID: R63094 Analyst: RL

Percent Moisture	11.0	0.500		wt%	1	11/3/2020 2:01:34 PM
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Client: Fulcrum Environmental

Collection Date: 10/27/2020 10:15:00 AM

Project: Ranch 19 East

Lab ID: 2010457-005

Matrix: Soil

Client Sample ID: R19E-102720-05.2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.</u>				Batch ID: 30217		Analyst: DW
Diesel (Fuel Oil)	ND	20.1		mg/Kg-dry	1	10/31/2020 7:24:11 AM
Heavy Oil	ND	50.4		mg/Kg-dry	1	10/31/2020 7:24:11 AM
Surr: 2-Fluorobiphenyl	55.3	50 - 150		%Rec	1	10/31/2020 7:24:11 AM
Surr: o-Terphenyl	84.3	50 - 150		%Rec	1	10/31/2020 7:24:11 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262 Analyst: KT

Benzene	ND	0.0243		mg/Kg-dry	1	11/3/2020 3:05:44 PM
Toluene	ND	0.0243		mg/Kg-dry	1	11/3/2020 3:05:44 PM
Ethylbenzene	ND	0.0304		mg/Kg-dry	1	11/3/2020 3:05:44 PM
m,p-Xylene	ND	0.0608		mg/Kg-dry	1	11/3/2020 3:05:44 PM
o-Xylene	ND	0.0304		mg/Kg-dry	1	11/3/2020 3:05:44 PM
Surr: Dibromofluoromethane	94.7	85.2 - 113		%Rec	1	11/3/2020 3:05:44 PM
Surr: Toluene-d8	99.6	88.5 - 110		%Rec	1	11/3/2020 3:05:44 PM
Surr: 1-Bromo-4-fluorobenzene	91.8	88.6 - 109		%Rec	1	11/3/2020 3:05:44 PM

Sample Moisture (Percent Moisture)

Batch ID: R63094 Analyst: RL

Percent Moisture	9.32	0.500		wt%	1	11/3/2020 2:01:34 PM
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Analytical Report

Work Order: 2010457

Date Reported: 11/4/2020

Client: Fulcrum Environmental

Collection Date: 10/27/2020 10:20:00 AM

Project: Ranch 19 East

Lab ID: 2010457-006

Matrix: Soil

Client Sample ID: R19E-102720-06.2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 30217

Analyst: DW

Diesel (Fuel Oil)	ND	20.7		mg/Kg-dry	1	10/31/2020 7:53:49 AM
Heavy Oil	ND	51.7		mg/Kg-dry	1	10/31/2020 7:53:49 AM
Surr: 2-Fluorobiphenyl	62.0	50 - 150		%Rec	1	10/31/2020 7:53:49 AM
Surr: o-Terphenyl	73.0	50 - 150		%Rec	1	10/31/2020 7:53:49 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262

Analyst: KT

Benzene	ND	0.0237		mg/Kg-dry	1	11/3/2020 3:36:15 PM
Toluene	ND	0.0237		mg/Kg-dry	1	11/3/2020 3:36:15 PM
Ethylbenzene	ND	0.0296		mg/Kg-dry	1	11/3/2020 3:36:15 PM
m,p-Xylene	ND	0.0593		mg/Kg-dry	1	11/3/2020 3:36:15 PM
o-Xylene	ND	0.0296		mg/Kg-dry	1	11/3/2020 3:36:15 PM
Surr: Dibromofluoromethane	95.1	85.2 - 113		%Rec	1	11/3/2020 3:36:15 PM
Surr: Toluene-d8	99.7	88.5 - 110		%Rec	1	11/3/2020 3:36:15 PM
Surr: 1-Bromo-4-fluorobenzene	93.5	88.6 - 109		%Rec	1	11/3/2020 3:36:15 PM

Sample Moisture (Percent Moisture)

Batch ID: R63094

Analyst: RL

Percent Moisture	8.14	0.500		wt%	1	11/3/2020 2:01:34 PM
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Analytical Report

Work Order: 2010457

Date Reported: 11/4/2020

Client: Fulcrum Environmental

Collection Date: 10/27/2020 10:23:00 AM

Project: Ranch 19 East

Lab ID: 2010457-007

Matrix: Soil

Client Sample ID: R19E-102720-07.2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 30217

Analyst: DW

Diesel (Fuel Oil)	ND	19.6		mg/Kg-dry	1	10/31/2020 8:23:27 AM
Heavy Oil	ND	49.0		mg/Kg-dry	1	10/31/2020 8:23:27 AM
Surr: 2-Fluorobiphenyl	69.8	50 - 150		%Rec	1	10/31/2020 8:23:27 AM
Surr: o-Terphenyl	80.4	50 - 150		%Rec	1	10/31/2020 8:23:27 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262

Analyst: KT

Benzene	ND	0.0265		mg/Kg-dry	1	11/3/2020 4:06:46 PM
Toluene	ND	0.0265		mg/Kg-dry	1	11/3/2020 4:06:46 PM
Ethylbenzene	ND	0.0331		mg/Kg-dry	1	11/3/2020 4:06:46 PM
m,p-Xylene	ND	0.0662		mg/Kg-dry	1	11/3/2020 4:06:46 PM
o-Xylene	ND	0.0331		mg/Kg-dry	1	11/3/2020 4:06:46 PM
Surr: Dibromofluoromethane	94.7	85.2 - 113		%Rec	1	11/3/2020 4:06:46 PM
Surr: Toluene-d8	99.1	88.5 - 110		%Rec	1	11/3/2020 4:06:46 PM
Surr: 1-Bromo-4-fluorobenzene	95.5	88.6 - 109		%Rec	1	11/3/2020 4:06:46 PM

Sample Moisture (Percent Moisture)

Batch ID: R63094

Analyst: RL

Percent Moisture	8.33	0.500		wt%	1	11/3/2020 2:01:34 PM
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Analytical Report

Work Order: 2010457

Date Reported: 11/4/2020

Client: Fulcrum Environmental

Collection Date: 10/27/2020 10:53:00 AM

Project: Ranch 19 East

Lab ID: 2010457-008

Matrix: Soil

Client Sample ID: R19E-102720-08.3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 30217

Analyst: DW

Diesel (Fuel Oil)	ND	19.6		mg/Kg-dry	1	10/31/2020 8:53:10 AM
Heavy Oil	ND	49.1		mg/Kg-dry	1	10/31/2020 8:53:10 AM
Surr: 2-Fluorobiphenyl	72.0	50 - 150		%Rec	1	10/31/2020 8:53:10 AM
Surr: o-Terphenyl	82.3	50 - 150		%Rec	1	10/31/2020 8:53:10 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262

Analyst: KT

Benzene	ND	0.0244		mg/Kg-dry	1	11/3/2020 4:37:10 PM
Toluene	ND	0.0244		mg/Kg-dry	1	11/3/2020 4:37:10 PM
Ethylbenzene	ND	0.0305		mg/Kg-dry	1	11/3/2020 4:37:10 PM
m,p-Xylene	ND	0.0610		mg/Kg-dry	1	11/3/2020 4:37:10 PM
o-Xylene	ND	0.0305		mg/Kg-dry	1	11/3/2020 4:37:10 PM
Surr: Dibromofluoromethane	95.1	85.2 - 113		%Rec	1	11/3/2020 4:37:10 PM
Surr: Toluene-d8	99.2	88.5 - 110		%Rec	1	11/3/2020 4:37:10 PM
Surr: 1-Bromo-4-fluorobenzene	90.8	88.6 - 109		%Rec	1	11/3/2020 4:37:10 PM

Sample Moisture (Percent Moisture)

Batch ID: R63094

Analyst: RL

Percent Moisture	10.8	0.500		wt%	1	11/3/2020 2:01:34 PM
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Analytical Report

Work Order: 2010457

Date Reported: 11/4/2020

Client: Fulcrum Environmental

Collection Date: 10/27/2020 11:00:00 AM

Project: Ranch 19 East

Lab ID: 2010457-009

Matrix: Soil

Client Sample ID: R19E-102720-09.3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 30217

Analyst: DW

Diesel (Fuel Oil)	ND	19.7		mg/Kg-dry	1	10/31/2020 9:22:47 AM
Heavy Oil	ND	49.2		mg/Kg-dry	1	10/31/2020 9:22:47 AM
Surr: 2-Fluorobiphenyl	58.8	50 - 150		%Rec	1	10/31/2020 9:22:47 AM
Surr: o-Terphenyl	72.7	50 - 150		%Rec	1	10/31/2020 9:22:47 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262

Analyst: KT

Benzene	ND	0.0239		mg/Kg-dry	1	11/3/2020 5:07:41 PM
Toluene	ND	0.0239		mg/Kg-dry	1	11/3/2020 5:07:41 PM
Ethylbenzene	ND	0.0299		mg/Kg-dry	1	11/3/2020 5:07:41 PM
m,p-Xylene	ND	0.0598		mg/Kg-dry	1	11/3/2020 5:07:41 PM
o-Xylene	ND	0.0299		mg/Kg-dry	1	11/3/2020 5:07:41 PM
Surr: Dibromofluoromethane	94.6	85.2 - 113		%Rec	1	11/3/2020 5:07:41 PM
Surr: Toluene-d8	99.4	88.5 - 110		%Rec	1	11/3/2020 5:07:41 PM
Surr: 1-Bromo-4-fluorobenzene	93.4	88.6 - 109		%Rec	1	11/3/2020 5:07:41 PM

Sample Moisture (Percent Moisture)

Batch ID: R63094

Analyst: RL

Percent Moisture	8.27	0.500		wt%	1	11/3/2020 2:01:34 PM
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Work Order: 2010457
CLIENT: Fulcrum Environmental
Project: Ranch 19 East

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: MB-30217		SampType: MBLK			Units: mg/Kg		Prep Date: 10/29/2020			RunNo: 63036		
Client ID: MBLKS		Batch ID: 30217			Analysis Date: 10/30/2020					SeqNo: 1265240		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	12.4		20.00		62.3	50	150				
Surr: o-Terphenyl	14.6		20.00		73.0	50	150				

Sample ID: LCS-30217		SampType: LCS			Units: mg/Kg		Prep Date: 10/29/2020		RunNo: 63036		
Client ID: LCSS		Batch ID: 30217			Analysis Date: 10/30/2020				SeqNo: 1265241		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	481	20.0	500.0	0	96.2	65	135				
Surr: 2-Fluorobiphenyl	16.5		20.00		82.5	50	150				
Surr: o-Terphenyl	17.6		20.00		88.0	50	150				

Sample ID: 2010457-004ADUP		SampType: DUP		Units: mg/Kg-dry		Prep Date: 10/29/2020		RunNo: 63036			
Client ID: R19E-102720-04.2.5		Batch ID: 30217				Analysis Date: 10/31/2020		SeqNo: 1265255			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	21.3						0		30	
Heavy Oil	ND	53.2						0		30	
Surr: 2-Fluorobiphenyl	15.3		21.27		72.0	50	150		0		
Surr: o-Terphenyl	17.8		21.27		83.6	50	150		0		

Sample ID: 2010441-003AMS		SampType: MS			Units: mg/Kg-dry		Prep Date: 10/29/2020		RunNo: 63052		
Client ID: BATCH		Batch ID: 30217			Analysis Date: 11/2/2020				SeqNo: 1265528		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	514	18.1	452.1	0	114	65	135				
Surr: 2-Fluorobiphenyl	20.2		18.08		111	50	150				
Surr: o-Terphenyl	20.0		18.08		111	50	150				

Work Order: 2010457
CLIENT: Fulcrum Environmental
Project: Ranch 19 East

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: 2010441-003AMS		SampType: MS			Units: mg/Kg-dry		Prep Date: 10/29/2020			RunNo: 63052		
Client ID: BATCH		Batch ID: 30217			Analysis Date: 11/2/2020					SeqNo: 1265528		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Sample ID: 2010441-003AMSD	SampType: MSD	Units: mg/Kg-dry				Prep Date: 10/29/2020			RunNo: 63052		
Client ID: BATCH	Batch ID: 30217					Analysis Date: 11/2/2020			SeqNo: 1265529		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	531	18.1	451.3	0	118	65	135	514.1	3.17	30	
Surr: 2-Fluorobiphenyl	20.0		18.05		111	50	150		0		
Surr: o-Terphenyl	20.1		18.05		112	50	150		0		

Work Order: 2010457
CLIENT: Fulcrum Environmental
Project: Ranch 19 East

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260D

Sample ID: LCS-30262	SampType: LCS	Units: mg/Kg				Prep Date: 11/3/2020			RunNo: 63118		
Client ID: LCSS	Batch ID: 30262	Analysis Date: 11/3/2020						SeqNo: 1266808			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.996	0.0200	1.000	0	99.6	79.4	116				
Toluene	1.04	0.0200	1.000	0	104	80.5	115				
Ethylbenzene	1.05	0.0250	1.000	0	105	81.6	116				
m,p-Xylene	2.10	0.0500	2.000	0	105	83.2	115				
o-Xylene	1.03	0.0250	1.000	0	103	82.5	114				
Surr: Dibromofluoromethane	1.26		1.250		101	85.2	113				
Surr: Toluene-d8	1.27		1.250		102	88.5	110				
Surr: 1-Bromo-4-fluorobenzene	1.26		1.250		101	88.6	109				

Sample ID: MB-30262	SampType: MBLK	Units: mg/Kg			Prep Date: 11/3/2020			RunNo: 63118			
Client ID: MBLKS	Batch ID: 30262				Analysis Date: 11/3/2020			SeqNo: 1266807			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.0200									
Toluene	ND	0.0200									
Ethylbenzene	ND	0.0250									
m,p-Xylene	ND	0.0500									
o-Xylene	ND	0.0250									
Surr: Dibromofluoromethane	1.20		1.250		95.8	85.2	113				
Surr: Toluene-d8	1.23		1.250		98.4	88.5	110				
Surr: 1-Bromo-4-fluorobenzene	1.18		1.250		94.0	88.6	109				

Sample ID: 2010457-001BDUP	SampType: DUP	Units: mg/Kg-dry				Prep Date: 11/3/2020			RunNo: 63118		
Client ID: R19E-102720-01.2	Batch ID: 30262					Analysis Date: 11/3/2020			SeqNo: 1266793		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.0247						0		30	
Toluene	ND	0.0247						0		30	
Ethylbenzene	ND	0.0309						0		30	

Work Order: 2010457
CLIENT: Fulcrum Environmental
Project: Ranch 19 East

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260D

Sample ID: 2010457-001BDUP		SampType: DUP		Units: mg/Kg-dry		Prep Date: 11/3/2020		RunNo: 63118			
Client ID: R19E-102720-01.2		Batch ID: 30262				Analysis Date: 11/3/2020		SeqNo: 1266793			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
m,p-Xylene	ND	0.0617						0		30	
o-Xylene	ND	0.0309						0		30	
Surr: Dibromofluoromethane	1.49		1.543		96.6	85.2	113		0		
Surr: Toluene-d8	1.54		1.543		99.9	88.5	110		0		
Surr: 1-Bromo-4-fluorobenzene	1.47		1.543		95.5	88.6	109		0		

Sample ID: 2010457-002BMS		SampType: MS		Units: mg/Kg-dry		Prep Date: 11/3/2020		RunNo: 63118			
Client ID: R19E-102720-02.5.5		Batch ID: 30262				Analysis Date: 11/4/2020		SeqNo: 1266795			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.23	0.0238	1.189	0	103	74.6	126				
Toluene	1.25	0.0238	1.189	0	105	72.6	127				
Ethylbenzene	1.29	0.0297	1.189	0	109	77.3	126				
m,p-Xylene	2.58	0.0594	2.378	0	109	78.5	126				
o-Xylene	1.27	0.0297	1.189	0	107	79.4	123				
Surr: Dibromofluoromethane	1.52		1.486		102	85.2	113				
Surr: Toluene-d8	1.50		1.486		101	88.5	110				
Surr: 1-Bromo-4-fluorobenzene	1.55		1.486		104	88.6	109				

Client Name: **FE**
 Logged by: **Clare Griggs**

Work Order Number: **2010457**
 Date Received: **10/28/2020 9:28:00 AM**

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
 2. How was the sample delivered? UPS

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
 4. Shipping container/cooler in good condition? Yes ☒ No ☐
 5. Custody Seals present on shipping container/cooler?
 (Refer to comments for Custody Seals not intact) Yes ☐ No ☐ Not Present ☒
 6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
 7. Were all items received at a temperature of >2°C to 6°C * Yes ☒ No ☐ NA ☐
 8. Sample(s) in proper container(s)? Yes ☒ No ☐
 9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
 10. Are samples properly preserved? Yes ☒ No ☐
 11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
 12. Is there headspace in the VOA vials? Yes ☐ No ☐ NA ☒
 13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
 14. Does paperwork match bottle labels? Yes ☒ No ☐
 15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
 16. Is it clear what analyses were requested? Yes ☒ No ☐
 17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Sample	5.4

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



3600 Fremont Ave. N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 10/27/20 Page: 1 of 1

Project Name: Ranch 19 East

Project No: 192902.15

Collected by: NM

Location:

Report To (PM): JEREMY LYNN

PM Email:

Laboratory Project No (Internal): 2010457

Special Remarks:

Sample Disposal: ☐ Return to client ☐ Disposal by lab (after 30 days)

Client: Fulcrum Environmental

Address: 406 North 2nd Street

City, State, Zip: Yakima, Washington 98901

Telephone: 509.574.0839

Fax:

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	SVOCS (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) Dissolved (D)	Anions (IC)***	EDB (8011)	Comments
1 R19E-102720-01.2	10/27/20	9:35	S		+											Hand for PAHs
2 R19E-102720-02.5.5		9:45														
3 R19E-102720-03.3		9:55														
4 R19E-102720-04.2.5		10:03														
5 R19E-102720-05.2		10:15														
6 R19E-102720-06.2		10:20														
7 R19E-102720-07.2		10:23														
8 R19E-102720-08.3		10:53														
9 R19E-102720-09.3		11:00														
10																

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished Date/Time 10/27/20 Received Date/Time 10/28/20 0928
Relinquished Signature [Signature] Received Signature [Signature]

Turn-around Time: ☒ Standard ☐ 3 Day ☐ 2 Day ☐ Next Day ☐ Same Day (specify)



Fremont
Analytical

3600 Fremont Ave. N.

Seattle, WA 98103

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info@fremontanalytical.com

Fulcrum Environmental

Jeremy Lynn
406 N. 2nd Street
Yakima, WA 98901

RE: WA Land MGMT Ranch 19

Work Order Number: 2010479

November 11, 2020

Attention Jeremy Lynn:

Fremont Analytical, Inc. received 10 sample(s) on 10/29/2020 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample Moisture (Percent Moisture)

Volatile Organic Compounds by EPA Method 8260D

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Revision v1

www.fremontanalytical.com

CLIENT: Fulcrum Environmental
Project: WA Land MGMT Ranch 19
Work Order: 2010479

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2010479-001	R19E-102820-10.1	10/28/2020 10:05 AM	10/29/2020 9:34 AM
2010479-002	R19E-102820-11.2	10/28/2020 10:15 AM	10/29/2020 9:34 AM
2010479-003	R19E-102820-12.8	10/28/2020 10:18 AM	10/29/2020 9:34 AM
2010479-004	R19E-102820-13.1	10/28/2020 10:20 AM	10/29/2020 9:34 AM
2010479-005	R19E-102820-14.1	10/28/2020 10:40 AM	10/29/2020 9:34 AM
2010479-006	R19E-102820-15.1	10/28/2020 10:40 AM	10/29/2020 9:34 AM
2010479-007	R19E-102820-16.1	10/28/2020 1:00 PM	10/29/2020 9:34 AM
2010479-008	R19E-102820-17.6	10/28/2020 10:25 AM	10/29/2020 9:34 AM
2010479-009	R19E-102820-18.6	10/28/2020 10:28 AM	10/29/2020 9:34 AM
2010479-010	R19E-102820-19.6	10/28/2020 10:30 AM	10/29/2020 9:34 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

CLIENT: Fulcrum Environmental
Project: WA Land MGMT Ranch 19

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Revision 1 includes analysis requested by client.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Analytical Report

Work Order: 2010479

Date Reported: 11/11/2020

Client: Fulcrum Environmental

Collection Date: 10/28/2020 10:05:00 AM

Project: WA Land MGMT Ranch 19

Lab ID: 2010479-001

Matrix: Soil

Client Sample ID: R19E-102820-10.1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 30227

Analyst: DW

Diesel (Fuel Oil)	ND	18.6		mg/Kg-dry	1	10/31/2020 3:56:35 AM
Heavy Oil	ND	46.5		mg/Kg-dry	1	10/31/2020 3:56:35 AM
Surr: 2-Fluorobiphenyl	102	50 - 150		%Rec	1	10/31/2020 3:56:35 AM
Surr: o-Terphenyl	85.1	50 - 150		%Rec	1	10/31/2020 3:56:35 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262

Analyst: KT

Benzene	ND	0.0452		mg/Kg-dry	1	11/4/2020 10:02:02 AM
Toluene	ND	0.0452		mg/Kg-dry	1	11/4/2020 10:02:02 AM
Ethylbenzene	ND	0.0565		mg/Kg-dry	1	11/4/2020 10:02:02 AM
m,p-Xylene	ND	0.113		mg/Kg-dry	1	11/4/2020 10:02:02 AM
o-Xylene	ND	0.0565		mg/Kg-dry	1	11/4/2020 10:02:02 AM
Surr: Dibromofluoromethane	97.3	85.2 - 113		%Rec	1	11/4/2020 10:02:02 AM
Surr: Toluene-d8	100	88.5 - 110		%Rec	1	11/4/2020 10:02:02 AM
Surr: 1-Bromo-4-fluorobenzene	93.2	88.6 - 109		%Rec	1	11/4/2020 10:02:02 AM

Sample Moisture (Percent Moisture)

Batch ID: R63112

Analyst: CJ

Percent Moisture	7.70	0.500		wt%	1	11/4/2020 8:11:58 AM
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Analytical Report

Work Order: 2010479

Date Reported: 11/11/2020

Client: Fulcrum Environmental

Collection Date: 10/28/2020 10:15:00 AM

Project: WA Land MGMT Ranch 19

Lab ID: 2010479-002

Matrix: Soil

Client Sample ID: R19E-102820-11.2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 30227

Analyst: DW

Diesel (Fuel Oil)	ND	20.1		mg/Kg-dry	1	10/31/2020 4:26:15 AM
Heavy Oil	ND	50.2		mg/Kg-dry	1	10/31/2020 4:26:15 AM
Surr: 2-Fluorobiphenyl	106	50 - 150		%Rec	1	10/31/2020 4:26:15 AM
Surr: o-Terphenyl	90.0	50 - 150		%Rec	1	10/31/2020 4:26:15 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262

Analyst: KT

Benzene	ND	0.0282		mg/Kg-dry	1	11/4/2020 10:32:28 AM
Toluene	ND	0.0282		mg/Kg-dry	1	11/4/2020 10:32:28 AM
Ethylbenzene	ND	0.0353		mg/Kg-dry	1	11/4/2020 10:32:28 AM
m,p-Xylene	ND	0.0706		mg/Kg-dry	1	11/4/2020 10:32:28 AM
o-Xylene	ND	0.0353		mg/Kg-dry	1	11/4/2020 10:32:28 AM
Surr: Dibromofluoromethane	96.9	85.2 - 113		%Rec	1	11/4/2020 10:32:28 AM
Surr: Toluene-d8	100	88.5 - 110		%Rec	1	11/4/2020 10:32:28 AM
Surr: 1-Bromo-4-fluorobenzene	94.6	88.6 - 109		%Rec	1	11/4/2020 10:32:28 AM

Sample Moisture (Percent Moisture)

Batch ID: R63112

Analyst: CJ

Percent Moisture	7.34	0.500		wt%	1	11/4/2020 8:11:58 AM
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Analytical Report

Work Order: 2010479

Date Reported: 11/11/2020

Client: Fulcrum Environmental

Collection Date: 10/28/2020 10:18:00 AM

Project: WA Land MGMT Ranch 19

Lab ID: 2010479-003

Matrix: Soil

Client Sample ID: R19E-102820-12.8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 30227

Analyst: DW

Diesel (Fuel Oil)	ND	17.7		mg/Kg-dry	1	10/31/2020 4:55:52 AM
Heavy Oil	ND	44.3		mg/Kg-dry	1	10/31/2020 4:55:52 AM
Surr: 2-Fluorobiphenyl	102	50 - 150		%Rec	1	10/31/2020 4:55:52 AM
Surr: o-Terphenyl	86.4	50 - 150		%Rec	1	10/31/2020 4:55:52 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262

Analyst: KT

Benzene	ND	0.0286		mg/Kg-dry	1	11/4/2020 11:02:56 AM
Toluene	ND	0.0286		mg/Kg-dry	1	11/4/2020 11:02:56 AM
Ethylbenzene	ND	0.0357		mg/Kg-dry	1	11/4/2020 11:02:56 AM
m,p-Xylene	ND	0.0715		mg/Kg-dry	1	11/4/2020 11:02:56 AM
o-Xylene	ND	0.0357		mg/Kg-dry	1	11/4/2020 11:02:56 AM
Surr: Dibromofluoromethane	96.1	85.2 - 113		%Rec	1	11/4/2020 11:02:56 AM
Surr: Toluene-d8	99.2	88.5 - 110		%Rec	1	11/4/2020 11:02:56 AM
Surr: 1-Bromo-4-fluorobenzene	94.3	88.6 - 109		%Rec	1	11/4/2020 11:02:56 AM

Sample Moisture (Percent Moisture)

Batch ID: R63112

Analyst: CJ

Percent Moisture	3.52	0.500		wt%	1	11/4/2020 8:11:58 AM
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Analytical Report

Work Order: 2010479

Date Reported: 11/11/2020

Client: Fulcrum Environmental
Project: WA Land MGMT Ranch 19
Lab ID: 2010479-004
Client Sample ID: R19E-102820-13.1

Collection Date: 10/28/2020 10:20:00 AM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 30227

Analyst: DW

Diesel (Fuel Oil)	74.6	19.0		mg/Kg-dry	1	10/31/2020 5:25:37 AM
Heavy Oil	ND	47.6		mg/Kg-dry	1	10/31/2020 5:25:37 AM
Surr: 2-Fluorobiphenyl	110	50 - 150		%Rec	1	10/31/2020 5:25:37 AM
Surr: o-Terphenyl	95.0	50 - 150		%Rec	1	10/31/2020 5:25:37 AM

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Batch ID: 30353

Analyst: SB

Naphthalene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
2-Methylnaphthalene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
1-Methylnaphthalene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
Acenaphthylene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
Acenaphthene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
Fluorene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
Phenanthrene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
Anthracene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
Fluoranthene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
Pyrene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
Benz(a)anthracene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
Chrysene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
Benzo(b)fluoranthene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
Benzo(k)fluoranthene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
Benzo(a)pyrene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
Indeno(1,2,3-cd)pyrene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
Dibenz(a,h)anthracene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
Benzo(g,h,i)perylene	ND	39.5		µg/Kg-dry	1	11/10/2020 7:27:14 PM
Surr: 2-Fluorobiphenyl	72.6	16.9 - 122		%Rec	1	11/10/2020 7:27:14 PM
Surr: Terphenyl-d14 (surr)	97.1	38.4 - 153		%Rec	1	11/10/2020 7:27:14 PM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262

Analyst: KT

Benzene	ND	0.0266		mg/Kg-dry	1	11/4/2020 11:33:23 AM
Toluene	ND	0.0266		mg/Kg-dry	1	11/4/2020 11:33:23 AM
Ethylbenzene	ND	0.0332		mg/Kg-dry	1	11/4/2020 11:33:23 AM
m,p-Xylene	ND	0.0665		mg/Kg-dry	1	11/4/2020 11:33:23 AM
o-Xylene	ND	0.0332		mg/Kg-dry	1	11/4/2020 11:33:23 AM
Surr: Dibromofluoromethane	95.8	85.2 - 113		%Rec	1	11/4/2020 11:33:23 AM
Surr: Toluene-d8	99.8	88.5 - 110		%Rec	1	11/4/2020 11:33:23 AM
Surr: 1-Bromo-4-fluorobenzene	94.5	88.6 - 109		%Rec	1	11/4/2020 11:33:23 AM



Analytical Report

Work Order: 2010479
Date Reported: 11/11/2020

Client: Fulcrum Environmental
Project: WA Land MGMT Ranch 19
Lab ID: 2010479-004
Client Sample ID: R19E-102820-13.1

Collection Date: 10/28/2020 10:20:00 AM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Sample Moisture (Percent Moisture)

Batch ID: R63112 Analyst: CJ

Percent Moisture	7.23	0.500		wt%	1	11/4/2020 8:11:58 AM
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Analytical Report

Work Order: 2010479

Date Reported: 11/11/2020

Client: Fulcrum Environmental

Collection Date: 10/28/2020 10:40:00 AM

Project: WA Land MGMT Ranch 19

Lab ID: 2010479-005

Matrix: Soil

Client Sample ID: R19E-102820-14.1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 30253

Analyst: DW

Diesel (Fuel Oil)	ND	19.8	mg/Kg-dry	1	11/3/2020 5:16:07 AM
Heavy Oil	ND	49.4	mg/Kg-dry	1	11/3/2020 5:16:07 AM
Surr: 2-Fluorobiphenyl	107	50 - 150	%Rec	1	11/3/2020 5:16:07 AM
Surr: o-Terphenyl	89.9	50 - 150	%Rec	1	11/3/2020 5:16:07 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262

Analyst: KT

Benzene	ND	0.0340	mg/Kg-dry	1	11/4/2020 12:03:51 PM
Toluene	ND	0.0340	mg/Kg-dry	1	11/4/2020 12:03:51 PM
Ethylbenzene	ND	0.0425	mg/Kg-dry	1	11/4/2020 12:03:51 PM
m,p-Xylene	ND	0.0850	mg/Kg-dry	1	11/4/2020 12:03:51 PM
o-Xylene	ND	0.0425	mg/Kg-dry	1	11/4/2020 12:03:51 PM
Surr: Dibromofluoromethane	95.9	85.2 - 113	%Rec	1	11/4/2020 12:03:51 PM
Surr: Toluene-d8	99.9	88.5 - 110	%Rec	1	11/4/2020 12:03:51 PM
Surr: 1-Bromo-4-fluorobenzene	93.9	88.6 - 109	%Rec	1	11/4/2020 12:03:51 PM

Sample Moisture (Percent Moisture)

Batch ID: R63112

Analyst: CJ

Percent Moisture	7.32	0.500	wt%	1	11/4/2020 8:11:58 AM
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Analytical Report

Work Order: 2010479

Date Reported: 11/11/2020

Client: Fulcrum Environmental

Collection Date: 10/28/2020 10:40:00 AM

Project: WA Land MGMT Ranch 19

Lab ID: 2010479-006

Matrix: Soil

Client Sample ID: R19E-102820-15.1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 30244

Analyst: DW

Diesel (Fuel Oil)	ND	20.5		mg/Kg-dry	1	11/3/2020 8:44:39 AM
Heavy Oil	ND	51.3		mg/Kg-dry	1	11/3/2020 8:44:39 AM
Surr: 2-Fluorobiphenyl	79.5	50 - 150		%Rec	1	11/3/2020 8:44:39 AM
Surr: o-Terphenyl	79.8	50 - 150		%Rec	1	11/3/2020 8:44:39 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262

Analyst: KT

Benzene	ND	0.0276		mg/Kg-dry	1	11/4/2020 12:34:21 PM
Toluene	ND	0.0276		mg/Kg-dry	1	11/4/2020 12:34:21 PM
Ethylbenzene	ND	0.0345		mg/Kg-dry	1	11/4/2020 12:34:21 PM
m,p-Xylene	ND	0.0690		mg/Kg-dry	1	11/4/2020 12:34:21 PM
o-Xylene	ND	0.0345		mg/Kg-dry	1	11/4/2020 12:34:21 PM
Surr: Dibromofluoromethane	95.5	85.2 - 113		%Rec	1	11/4/2020 12:34:21 PM
Surr: Toluene-d8	99.1	88.5 - 110		%Rec	1	11/4/2020 12:34:21 PM
Surr: 1-Bromo-4-fluorobenzene	94.4	88.6 - 109		%Rec	1	11/4/2020 12:34:21 PM

Sample Moisture (Percent Moisture)

Batch ID: R63112

Analyst: CJ

Percent Moisture	6.84	0.500		wt%	1	11/4/2020 8:11:58 AM
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Analytical Report

Work Order: 2010479

Date Reported: 11/11/2020

Client: Fulcrum Environmental

Collection Date: 10/28/2020 1:00:00 PM

Project: WA Land MGMT Ranch 19

Lab ID: 2010479-007

Matrix: Soil

Client Sample ID: R19E-102820-16.1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 30244

Analyst: DW

Diesel (Fuel Oil)	ND	21.6	mg/Kg-dry	1	11/3/2020 10:14:33 AM
Heavy Oil	ND	54.0	mg/Kg-dry	1	11/3/2020 10:14:33 AM
Surr: 2-Fluorobiphenyl	76.6	50 - 150	%Rec	1	11/3/2020 10:14:33 AM
Surr: o-Terphenyl	76.2	50 - 150	%Rec	1	11/3/2020 10:14:33 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262

Analyst: KT

Benzene	ND	0.0375	mg/Kg-dry	1	11/4/2020 1:04:54 PM
Toluene	ND	0.0375	mg/Kg-dry	1	11/4/2020 1:04:54 PM
Ethylbenzene	ND	0.0469	mg/Kg-dry	1	11/4/2020 1:04:54 PM
m,p-Xylene	ND	0.0937	mg/Kg-dry	1	11/4/2020 1:04:54 PM
o-Xylene	ND	0.0469	mg/Kg-dry	1	11/4/2020 1:04:54 PM
Surr: Dibromofluoromethane	94.8	85.2 - 113	%Rec	1	11/4/2020 1:04:54 PM
Surr: Toluene-d8	99.4	88.5 - 110	%Rec	1	11/4/2020 1:04:54 PM
Surr: 1-Bromo-4-fluorobenzene	93.7	88.6 - 109	%Rec	1	11/4/2020 1:04:54 PM

Sample Moisture (Percent Moisture)

Batch ID: R63112

Analyst: CJ

Percent Moisture	10.3	0.500	wt%	1	11/4/2020 8:11:58 AM
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Analytical Report

Work Order: 2010479

Date Reported: 11/11/2020

Client: Fulcrum Environmental

Collection Date: 10/28/2020 10:25:00 AM

Project: WA Land MGMT Ranch 19

Lab ID: 2010479-008

Matrix: Soil

Client Sample ID: R19E-102820-17.6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 30244

Analyst: DW

Diesel (Fuel Oil)	ND	18.5		mg/Kg-dry	1	11/3/2020 10:44:27 AM
Heavy Oil	ND	46.3		mg/Kg-dry	1	11/3/2020 10:44:27 AM
Surr: 2-Fluorobiphenyl	90.2	50 - 150		%Rec	1	11/3/2020 10:44:27 AM
Surr: o-Terphenyl	89.6	50 - 150		%Rec	1	11/3/2020 10:44:27 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262

Analyst: KT

Benzene	ND	0.0225		mg/Kg-dry	1	11/4/2020 1:35:20 PM
Toluene	ND	0.0225		mg/Kg-dry	1	11/4/2020 1:35:20 PM
Ethylbenzene	ND	0.0281		mg/Kg-dry	1	11/4/2020 1:35:20 PM
m,p-Xylene	ND	0.0562		mg/Kg-dry	1	11/4/2020 1:35:20 PM
o-Xylene	ND	0.0281		mg/Kg-dry	1	11/4/2020 1:35:20 PM
Surr: Dibromofluoromethane	95.4	85.2 - 113		%Rec	1	11/4/2020 1:35:20 PM
Surr: Toluene-d8	99.8	88.5 - 110		%Rec	1	11/4/2020 1:35:20 PM
Surr: 1-Bromo-4-fluorobenzene	95.0	88.6 - 109		%Rec	1	11/4/2020 1:35:20 PM

Sample Moisture (Percent Moisture)

Batch ID: R63112

Analyst: CJ

Percent Moisture	3.74	0.500		wt%	1	11/4/2020 8:11:58 AM
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Analytical Report

Work Order: 2010479

Date Reported: 11/11/2020

Client: Fulcrum Environmental

Collection Date: 10/28/2020 10:28:00 AM

Project: WA Land MGMT Ranch 19

Lab ID: 2010479-009

Matrix: Soil

Client Sample ID: R19E-102820-18.6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 30244

Analyst: DW

Diesel (Fuel Oil)	ND	17.9		mg/Kg-dry	1	11/3/2020 11:14:24 AM
Heavy Oil	ND	44.8		mg/Kg-dry	1	11/3/2020 11:14:24 AM
Surr: 2-Fluorobiphenyl	77.8	50 - 150		%Rec	1	11/3/2020 11:14:24 AM
Surr: o-Terphenyl	78.1	50 - 150		%Rec	1	11/3/2020 11:14:24 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262

Analyst: KT

Benzene	ND	0.0241		mg/Kg-dry	1	11/4/2020 2:05:45 PM
Toluene	ND	0.0241		mg/Kg-dry	1	11/4/2020 2:05:45 PM
Ethylbenzene	ND	0.0301		mg/Kg-dry	1	11/4/2020 2:05:45 PM
m,p-Xylene	ND	0.0602		mg/Kg-dry	1	11/4/2020 2:05:45 PM
o-Xylene	ND	0.0301		mg/Kg-dry	1	11/4/2020 2:05:45 PM
Surr: Dibromofluoromethane	95.0	85.2 - 113		%Rec	1	11/4/2020 2:05:45 PM
Surr: Toluene-d8	100	88.5 - 110		%Rec	1	11/4/2020 2:05:45 PM
Surr: 1-Bromo-4-fluorobenzene	93.9	88.6 - 109		%Rec	1	11/4/2020 2:05:45 PM

Sample Moisture (Percent Moisture)

Batch ID: R63112

Analyst: CJ

Percent Moisture	2.93	0.500		wt%	1	11/4/2020 8:11:58 AM
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Client: Fulcrum Environmental

Collection Date: 10/28/2020 10:30:00 AM

Project: WA Land MGMT Ranch 19

Lab ID: 2010479-010

Matrix: Soil

Client Sample ID: R19E-102820-19.6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 30244

Analyst: DW

Diesel (Fuel Oil)	ND	19.8		mg/Kg-dry	1	11/3/2020 11:44:12 AM
Heavy Oil	ND	49.5		mg/Kg-dry	1	11/3/2020 11:44:12 AM
Surr: 2-Fluorobiphenyl	76.6	50 - 150		%Rec	1	11/3/2020 11:44:12 AM
Surr: o-Terphenyl	77.5	50 - 150		%Rec	1	11/3/2020 11:44:12 AM

Volatile Organic Compounds by EPA Method 8260D

Batch ID: 30262

Analyst: KT

Benzene	ND	0.0284		mg/Kg-dry	1	11/4/2020 2:36:18 PM
Toluene	ND	0.0284		mg/Kg-dry	1	11/4/2020 2:36:18 PM
Ethylbenzene	ND	0.0355		mg/Kg-dry	1	11/4/2020 2:36:18 PM
m,p-Xylene	ND	0.0709		mg/Kg-dry	1	11/4/2020 2:36:18 PM
o-Xylene	ND	0.0355		mg/Kg-dry	1	11/4/2020 2:36:18 PM
Surr: Dibromofluoromethane	94.4	85.2 - 113		%Rec	1	11/4/2020 2:36:18 PM
Surr: Toluene-d8	100	88.5 - 110		%Rec	1	11/4/2020 2:36:18 PM
Surr: 1-Bromo-4-fluorobenzene	92.0	88.6 - 109		%Rec	1	11/4/2020 2:36:18 PM

Sample Moisture (Percent Moisture)

Batch ID: R63112

Analyst: CJ

Percent Moisture	3.01	0.500		wt%	1	11/4/2020 8:11:58 AM
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Work Order: 2010479
CLIENT: Fulcrum Environmental
Project: WA Land MGMT Ranch 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: MB-30227		SampType: MBLK			Units: mg/Kg		Prep Date: 10/30/2020			RunNo: 63022		
Client ID: MBLKS		Batch ID: 30227			Analysis Date: 10/30/2020					SeqNo: 1264972		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	19.9		20.00		99.4	50	150				
Surr: o-Terphenyl	16.2		20.00		80.8	50	150				

Sample ID: LCS-30227		SampType: LCS			Units: mg/Kg		Prep Date: 10/30/2020			RunNo: 63022		
Client ID: LCSS		Batch ID: 30227			Analysis Date: 10/30/2020					SeqNo: 1264973		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Diesel (Fuel Oil)	451	20.0	500.0	0	90.3	65	135				
Surr: 2-Fluorobiphenyl	20.3		20.00		101	50	150				
Surr: o-Terphenyl	18.7		20.00		93.6	50	150				

Sample ID: 2010496-003AMS		SampType: MS			Units: mg/Kg-dry		Prep Date: 10/30/2020		RunNo: 63022		
Client ID: BATCH		Batch ID: 30227			Analysis Date: 10/30/2020				SeqNo: 1264980		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	487	19.8	494.2	20.75	94.3	65	135				
Surr: 2-Fluorobiphenyl	19.2		19.77		96.9	50	150				
Surr: o-Terphenyl	18.2		19.77		91.9	50	150				

Sample ID: 2010496-003AMSD		SampType: MSD			Units: mg/Kg-dry		Prep Date: 10/30/2020		RunNo: 63022		
Client ID: BATCH		Batch ID: 30227			Analysis Date: 10/30/2020				SeqNo: 1264981		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	630	22.6	564.6	20.75	108	65	135	486.8	25.7	30	
Surr: 2-Fluorobiphenyl	22.1		22.59		97.7	50	150		0		
Surr: o-Terphenyl	21.1		22.59		93.3	50	150		0		

Work Order: 2010479
CLIENT: Fulcrum Environmental
Project: WA Land MGMT Ranch 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: 2010479-004ADUP		SampType: DUP		Units: mg/Kg-dry		Prep Date: 10/30/2020			RunNo: 63022		
Client ID: R19E-102820-13.1		Batch ID: 30227					Analysis Date: 10/31/2020			SeqNo: 1264999	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	74.3	20.4						74.57	0.406	30	
Heavy Oil	ND	51.0						0		30	
Surr: 2-Fluorobiphenyl	20.1		20.40		98.4	50	150		0		
Surr: o-Terphenyl	17.7		20.40		86.9	50	150		0		

Sample ID: MB-30244	SampType: MBLK	Units: mg/Kg			Prep Date: 11/2/2020			RunNo: 63059			
Client ID: MBLKS	Batch ID: 30244				Analysis Date: 11/2/2020			SeqNo: 1265670			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	17.7		20.00		88.7	50	150				
Surr: o-Terphenyl	18.1		20.00		90.4	50	150				

Sample ID: LCS-30244	SampType: LCS	Units: mg/Kg			Prep Date: 11/2/2020			RunNo: 63059			
Client ID: LCSS	Batch ID: 30244				Analysis Date: 11/2/2020			SeqNo: 1265671			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	524	20.0	500.0	0	105	65	135				
Surr: 2-Fluorobiphenyl	22.4		20.00		112	50	150				
Surr: o-Terphenyl	23.4		20.00		117	50	150				

Sample ID: MB-30253	SampType: MBLK	Units: mg/Kg			Prep Date: 11/2/2020			RunNo: 63061			
Client ID: MBLKS	Batch ID: 30253	Analysis Date: 11/2/2020						SeqNo: 1265708			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	24.3		20.00		121	50	150				

Work Order: 2010479
CLIENT: Fulcrum Environmental
Project: WA Land MGMT Ranch 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: MB-30253		SampType: MBLK			Units: mg/Kg		Prep Date: 11/2/2020			RunNo: 63061		
Client ID: MBLKS		Batch ID: 30253			Analysis Date: 11/2/2020					SeqNo: 1265708		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Surr: o-Terphenyl	20.1		20.00		101	50	150				
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Sample ID: LCS-30253	SampType: LCS	Units: mg/Kg			Prep Date: 11/2/2020			RunNo: 63061			
Client ID: LCSS	Batch ID: 30253				Analysis Date: 11/2/2020			SeqNo: 1265709			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	492	20.0	500.0	0	98.5	65	135				
Surr: 2-Fluorobiphenyl	23.6		20.00		118	50	150				
Surr: o-Terphenyl	22.1		20.00		110	50	150				

Sample ID: 2010469-011ADUP		SampType: DUP		Units: mg/Kg-dry		Prep Date: 11/2/2020			RunNo: 63061		
Client ID: BATCH		Batch ID: 30253					Analysis Date: 11/3/2020			SeqNo: 1265725	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	23.0						0		30	
Heavy Oil	ND	57.4						0		30	
Surr: 2-Fluorobiphenyl	25.0		22.96		109	50	150		0		
Surr: o-Terphenyl	21.3		22.96		92.8	50	150		0		

Sample ID: 2010469-014AMS		SampType: MS			Units: mg/Kg-dry		Prep Date: 11/2/2020		RunNo: 63061		
Client ID: BATCH		Batch ID: 30253			Analysis Date: 11/3/2020				SeqNo: 1265729		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	586	24.5	611.7	0	95.8	65	135				
Surr: 2-Fluorobiphenyl	27.1		24.47		111	50	150				
Surr: o-Terphenyl	25.5		24.47		104	50	150				

Work Order: 2010479
CLIENT: Fulcrum Environmental
Project: WA Land MGMT Ranch 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: 2010469-014AMSD		SampType: MSD		Units: mg/Kg-dry		Prep Date: 11/2/2020			RunNo: 63061		
Client ID: BATCH		Batch ID: 30253					Analysis Date: 11/3/2020			SeqNo: 1265730	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	543	22.1	553.3	0	98.1	65	135	585.8	7.66	30	
Surr: 2-Fluorobiphenyl	23.7		22.13		107	50	150		0		
Surr: o-Terphenyl	23.1		22.13		104	50	150		0		

Sample ID: 2010479-006AMS		SampType: MS		Units: mg/Kg-dry		Prep Date: 11/2/2020			RunNo: 63059		
Client ID: R19E-102820-15.1		Batch ID: 30244					Analysis Date: 11/3/2020			SeqNo: 1266524	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	455	18.2	455.6	4.710	98.7	65	135				
Surr: 2-Fluorobiphenyl	16.4		18.22		90.0	50	150				
Surr: o-Terphenyl	14.7		18.22		80.5	50	150				

Sample ID: 2010479-006AMSD		SampType: MSD		Units: mg/Kg-dry		Prep Date: 11/2/2020			RunNo: 63059		
Client ID: R19E-102820-15.1		Batch ID: 30244					Analysis Date: 11/3/2020			SeqNo: 1266525	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	446	18.3	458.7	4.710	96.2	65	135	454.6	1.96	30	
Surr: 2-Fluorobiphenyl	17.9		18.35		97.5	50	150		0		
Surr: o-Terphenyl	18.7		18.35		102	50	150		0		

Work Order: 2010479
CLIENT: Fulcrum Environmental
Project: WA Land MGMT Ranch 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: MB-30353	SampType: MBLK	Units: µg/Kg			Prep Date: 11/10/2020			RunNo: 63297			
Client ID: MBLKS	Batch ID: 30353	Analysis Date: 11/10/2020						SeqNo: 1270424			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	40.0									
2-Methylnaphthalene	ND	40.0									
1-Methylnaphthalene	ND	40.0									
Acenaphthylene	ND	40.0									
Acenaphthene	ND	40.0									
Fluorene	ND	40.0									
Phenanthrene	ND	40.0									
Anthracene	ND	40.0									
Fluoranthene	ND	40.0									
Pyrene	ND	40.0									
Benz(a)anthracene	ND	40.0									
Chrysene	ND	40.0									
Benzo(b)fluoranthene	ND	40.0									
Benzo(k)fluoranthene	ND	40.0									
Benzo(a)pyrene	ND	40.0									
Indeno(1,2,3-cd)pyrene	ND	40.0									
Dibenz(a,h)anthracene	ND	40.0									
Benzo(g,h,i)perylene	ND	40.0									
Surr: 2-Fluorobiphenyl	519		500.0		104	16.9	122				
Surr: Terphenyl-d14 (surr)	562		500.0		112	38.4	153				

Sample ID: LCS-30353	SampType: LCS	Units: µg/Kg			Prep Date: 11/10/2020			RunNo: 63297			
Client ID: LCSS	Batch ID: 30353				Analysis Date: 11/10/2020			SeqNo: 1270425			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,050	40.0	1,000	0	105	57.2	127				
2-Methylnaphthalene	1,050	40.0	1,000	0	105	55.1	134				
1-Methylnaphthalene	1,090	40.0	1,000	0	109	56.9	136				
Acenaphthylene	830	40.0	1,000	0	83.0	58.5	132				
Acenaphthene	1,020	40.0	1,000	0	102	57.9	132				

Work Order: 2010479
CLIENT: Fulcrum Environmental
Project: WA Land MGMT Ranch 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: LCS-30353	SampType: LCS	Units: µg/Kg				Prep Date: 11/10/2020			RunNo: 63297		
Client ID: LCSS	Batch ID: 30353	Analysis Date: 11/10/2020							SeqNo: 1270425		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluorene	1,260	40.0	1,000	0	126	59.2	134				
Phenanthrene	1,050	40.0	1,000	0	105	57.1	135				
Anthracene	1,030	40.0	1,000	0	103	55.7	137				
Fluoranthene	1,120	40.0	1,000	0	112	58.1	134				
Pyrene	1,090	40.0	1,000	0	109	59.6	136				
Benz(a)anthracene	1,030	40.0	1,000	0	103	51.5	139				
Chrysene	1,070	40.0	1,000	0	107	58.3	130				
Benzo(b)fluoranthene	1,040	40.0	1,000	0	104	53.4	138				
Benzo(k)fluoranthene	1,160	40.0	1,000	0	116	50.9	140				
Benzo(a)pyrene	1,300	40.0	1,000	0	130	50.4	143				
Indeno(1,2,3-cd)pyrene	1,270	40.0	1,000	0	127	52.3	138				
Dibenz(a,h)anthracene	1,190	40.0	1,000	0	119	53	140				
Benzo(g,h,i)perylene	1,180	40.0	1,000	0	118	51.7	139				
Surr: 2-Fluorobiphenyl	536		500.0		107	16.9	122				
Surr: Terphenyl-d14 (surr)	596		500.0		119	38.4	153				

Sample ID: 2010479-004AMS	SampType: MS	Units: µg/Kg-dry				Prep Date: 11/10/2020			RunNo: 63297		
Client ID: R19E-102820-13.1	Batch ID: 30353	Analysis Date: 11/10/2020							SeqNo: 1270427		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	701	39.0	975.5	0	71.9	46	106				
2-Methylnaphthalene	698	39.0	975.5	0	71.6	45.3	117				
1-Methylnaphthalene	719	39.0	975.5	0	73.7	48.6	116				
Acenaphthylene	652	39.0	975.5	0	66.8	50	114				
Acenaphthene	680	39.0	975.5	0	69.7	54.9	108				
Fluorene	731	39.0	975.5	0	74.9	54.3	110				
Phenanthrene	710	39.0	975.5	0	72.8	48.9	114				
Anthracene	720	39.0	975.5	0	73.8	53.1	111				
Fluoranthene	834	39.0	975.5	0	85.5	48.5	117				
Pyrene	812	39.0	975.5	8.157	82.4	48.5	121				

Work Order: 2010479
CLIENT: Fulcrum Environmental
Project: WA Land MGMT Ranch 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: 2010479-004AMS	SampType: MS	Units: µg/Kg-dry				Prep Date: 11/10/2020			RunNo: 63297		
Client ID: R19E-102820-13.1	Batch ID: 30353	Analysis Date: 11/10/2020							SeqNo: 1270427		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	786	39.0	975.5	0	80.6	39.9	125				
Chrysene	725	39.0	975.5	0	74.3	46.8	112				
Benzo(b)fluoranthene	781	39.0	975.5	0	80.1	42.4	123				
Benzo(k)fluoranthene	735	39.0	975.5	0	75.3	41.7	122				
Benzo(a)pyrene	889	39.0	975.5	0	91.1	48.2	121				
Indeno(1,2,3-cd)pyrene	783	39.0	975.5	0	80.3	43.6	114				
Dibenz(a,h)anthracene	730	39.0	975.5	0	74.8	43.7	116				
Benzo(g,h,i)perylene	731	39.0	975.5	0	75.0	43.7	115				
Surr: 2-Fluorobiphenyl	356		487.7		73.1	16.9	122				
Surr: Terphenyl-d14 (surr)	374		487.7		76.6	38.4	153				

Sample ID: 2010479-004AMSD	SampType: MSD	Units: µg/Kg-dry				Prep Date: 11/10/2020			RunNo: 63297		
Client ID: R19E-102820-13.1	Batch ID: 30353	Analysis Date: 11/10/2020							SeqNo: 1270428		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	746	38.6	965.9	0	77.2	46	106	700.9	6.23	30	
2-Methylnaphthalene	734	38.6	965.9	0	76.0	45.3	117	698.0	5.03	30	
1-Methylnaphthalene	767	38.6	965.9	0	79.4	48.6	116	719.4	6.42	30	
Acenaphthylene	601	38.6	965.9	0	62.2	50	114	651.5	8.06	30	
Acenaphthene	719	38.6	965.9	0	74.4	54.9	108	679.9	5.60	30	
Fluorene	890	38.6	965.9	0	92.1	54.3	110	730.8	19.7	30	
Phenanthrene	732	38.6	965.9	0	75.7	48.9	114	710.4	2.94	30	
Anthracene	729	38.6	965.9	0	75.4	53.1	111	719.8	1.20	30	
Fluoranthene	726	38.6	965.9	0	75.2	48.5	117	834.5	13.9	30	
Pyrene	702	38.6	965.9	8.157	71.9	48.5	121	811.7	14.5	30	
Benz(a)anthracene	854	38.6	965.9	0	88.4	39.9	125	786.2	8.28	30	
Chrysene	751	38.6	965.9	0	77.8	46.8	112	724.9	3.59	30	
Benzo(b)fluoranthene	764	38.6	965.9	0	79.1	42.4	123	781.4	2.30	30	
Benzo(k)fluoranthene	742	38.6	965.9	0	76.8	41.7	122	734.8	0.954	30	
Benzo(a)pyrene	873	38.6	965.9	0	90.4	48.2	121	888.5	1.72	30	

Work Order: 2010479
CLIENT: Fulcrum Environmental
Project: WA Land MGMT Ranch 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: 2010479-004AMSD		SampType: MSD		Units: µg/Kg-dry		Prep Date: 11/10/2020			RunNo: 63297		
Client ID: R19E-102820-13.1		Batch ID: 30353				Analysis Date: 11/10/2020			SeqNo: 1270428		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Indeno(1,2,3-cd)pyrene	803	38.6	965.9	0	83.2	43.6	114	783.1	2.54	30	
Dibenz(a,h)anthracene	743	38.6	965.9	0	77.0	43.7	116	730.0	1.83	30	
Benzo(g,h,i)perylene	745	38.6	965.9	0	77.2	43.7	115	731.4	1.89	30	
Surr: 2-Fluorobiphenyl	385		482.9		79.8	16.9	122		0		
Surr: Terphenyl-d14 (surr)	379		482.9		78.5	38.4	153		0		

Work Order: 2010479
CLIENT: Fulcrum Environmental
Project: WA Land MGMT Ranch 19

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260D

Sample ID: LCS-30262		SampType: LCS		Units: mg/Kg		Prep Date: 11/3/2020		RunNo: 63118			
Client ID: LCSS		Batch ID: 30262				Analysis Date: 11/3/2020		SeqNo: 1266808			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.996	0.0200	1.000	0	99.6	79.4	116				
Toluene	1.04	0.0200	1.000	0	104	80.5	115				
Ethylbenzene	1.05	0.0250	1.000	0	105	81.6	116				
m,p-Xylene	2.10	0.0500	2.000	0	105	83.2	115				
o-Xylene	1.03	0.0250	1.000	0	103	82.5	114				
Surr: Dibromofluoromethane	1.26		1.250		101	85.2	113				
Surr: Toluene-d8	1.27		1.250		102	88.5	110				
Surr: 1-Bromo-4-fluorobenzene	1.26		1.250		101	88.6	109				

Sample ID: MB-30262		SampType: MBLK		Units: mg/Kg		Prep Date: 11/3/2020		RunNo: 63118			
Client ID: MBLKS		Batch ID: 30262				Analysis Date: 11/3/2020		SeqNo: 1266807			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.0200									
Toluene	ND	0.0200									
Ethylbenzene	ND	0.0250									
m,p-Xylene	ND	0.0500									
o-Xylene	ND	0.0250									
Surr: Dibromofluoromethane	1.20		1.250		95.8	85.2	113				
Surr: Toluene-d8	1.23		1.250		98.4	88.5	110				
Surr: 1-Bromo-4-fluorobenzene	1.18		1.250		94.0	88.6	109				

Sample ID: 2010457-001BDUP		SampType: DUP		Units: mg/Kg-dry		Prep Date: 11/3/2020		RunNo: 63118			
Client ID: BATCH		Batch ID: 30262				Analysis Date: 11/3/2020		SeqNo: 1266793			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.0247						0		30	
Toluene	ND	0.0247						0		30	
Ethylbenzene	ND	0.0309						0		30	

Work Order: 2010479
CLIENT: Fulcrum Environmental
Project: WA Land MGMT Ranch 19

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260D

Sample ID: 2010457-001BDUP		SampType: DUP		Units: mg/Kg-dry		Prep Date: 11/3/2020		RunNo: 63118			
Client ID: BATCH		Batch ID: 30262				Analysis Date: 11/3/2020		SeqNo: 1266793			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
m,p-Xylene	ND	0.0617						0		30	
o-Xylene	ND	0.0309						0		30	
Surr: Dibromofluoromethane	1.49		1.543		96.6	85.2	113		0		
Surr: Toluene-d8	1.54		1.543		99.9	88.5	110		0		
Surr: 1-Bromo-4-fluorobenzene	1.47		1.543		95.5	88.6	109		0		

Sample ID: 2010457-002BMS		SampType: MS		Units: mg/Kg-dry		Prep Date: 11/3/2020		RunNo: 63118			
Client ID: BATCH		Batch ID: 30262				Analysis Date: 11/4/2020		SeqNo: 1266795			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.23	0.0238	1.189	0	103	74.6	126				
Toluene	1.25	0.0238	1.189	0	105	72.6	127				
Ethylbenzene	1.29	0.0297	1.189	0	109	77.3	126				
m,p-Xylene	2.58	0.0594	2.378	0	109	78.5	126				
o-Xylene	1.27	0.0297	1.189	0	107	79.4	123				
Surr: Dibromofluoromethane	1.52		1.486		102	85.2	113				
Surr: Toluene-d8	1.50		1.486		101	88.5	110				
Surr: 1-Bromo-4-fluorobenzene	1.55		1.486		104	88.6	109				

Client Name: **FE**
 Logged by: **Carissa True**

Work Order Number: **2010479**
 Date Received: **10/29/2020 9:34:00 AM**

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
 2. How was the sample delivered? UPS

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
 4. Shipping container/cooler in good condition? Yes ☒ No ☐
 5. Custody Seals present on shipping container/cooler?
 (Refer to comments for Custody Seals not intact) Yes ☐ No ☐ Not Present ☒
 6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
 7. Were all items received at a temperature of >2°C to 6°C * Yes ☒ No ☐ NA ☐
 8. Sample(s) in proper container(s)? Yes ☒ No ☐
 9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
 10. Are samples properly preserved? Yes ☒ No ☐
 11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
 12. Is there headspace in the VOA vials? Yes ☐ No ☐ NA ☒
 13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
 14. Does paperwork match bottle labels? Yes ☒ No ☐
 15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
 16. Is it clear what analyses were requested? Yes ☒ No ☐
 17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Sample 1	2.3

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 10/28/20 Page: 1 of 2

Laboratory Project No (Internal): 2010479

Project Name: LINDSEY MANT PLANT 12

Special Remarks:

Project No:

Collected by: J. LYNN

Location: PLANT 12

Report To (PM): J. LYNN

Sample Disposal: ☐ Return to client ☐ Disposal by lab (after 30 days)

Client: FUSION ENVIRONMENTAL CONSULTING

Address: 406 N. 2ND STREET

City, State, Zip: YAKIMA, WA 98901

Telephone: 509.574.0839

PM Email: J. LYNN@FUSION-ENV.COM

Fax: 509.575.8453

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCD)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) Dissolved (D)	Anions (IC)***	EDB (8011)	Comments
-------------	-------------	-------------	-----------------------	-----------------------	---------	------	------------------------------	----------------------------------	------------------------	-----------------------	-----------------------	-----------------------------	---------------------------	----------------	------------	----------

1	Z19E-102820-10.1	10/28	10:05	Soil	X		X									
2	-11.2		10:15													
3	-12.8		10:18													
4	-13.1		10:20													
5	-14.1		10:40													
6	-15.1		10:41													
7	-16.1		13:00													
8	-17.6		10:35													
9	-18.6		10:28													
10	-19.6		10:30													

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide Iodide Phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time	Turn-around Time:
	10/28/20 16:00		10/28/20 0934	<input checked="" type="checkbox"/> Standard
Relinquished	Date/Time	Received	Date/Time	<input type="checkbox"/> 3 Day
				<input type="checkbox"/> 2 Day
				<input type="checkbox"/> Next Day
				Same Day (specify)



3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 10/28/20 Page: 1 of 2

Laboratory Project No (Internal): 2010479
Special Remarks:
Add analysis 11/5/20 per NM-gac

Project Name: Lm Land Maint Ranch 19

Project No:

Collected by: J. Lynn

Location: Ranch 19

Report To (PM): J. Lynn

Sample Disposal: ☐ Return to client ☐ Disposal by lab (after 30 days)

Client: Fumam Evidence Consultants

Address: 406 N. 2nd Street

City, State, Zip: Yakima, WA 98901

Telephone: 509.574.0839

PM Email: J.Lynn@fumam.net

Fax: 509.575.8453

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*																Comments
				VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCD)	Diesel/Heavy Oil Range Organics (DHO)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) Dissolved (D)	Anions (IC)***	EDB (8011)			
1. 1749E-102820-10.1	10/28	10:05	Soil																
2. -11.2		10:15																	
3. -12.8		10:18																	
4. -13.1		10:20																	
5. -14.1		10:40																	
6. -15.1		10:41																	
7. -16.1		13:00																	
8. -17.6		10:35																	
9. -18.6		10:28																	
10. -19.6		10:31																	

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide Iodide Phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished Date/Time 10/28/20 16:00

Relinquished Date/Time 10/28/20 16:00

Received

Received

Date/Time 10/28/20 0934

Date/Time

Turn-around Time:

☒ Standard

☐ 3 Day

☐ 2 Day

☐ Next Day

Same Day

(specify)



Appendix F

TEE Form



Voluntary Cleanup Program

Washington State Department of Ecology Toxics Cleanup Program

TERRESTRIAL ECOLOGICAL EVALUATION FORM

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

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

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

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

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

Step 1: IDENTIFY HAZARDOUS WASTE SITE

Please identify below the hazardous waste site for which you are documenting an evaluation.

Facility/Site Name: Ranch 19 East

Facility/Site Address: 441 Williamson Road, Sunnyside, Washington

Facility/Site No:

VCP Project No.:

Step 2: IDENTIFY EVALUATOR

Please identify below the person who conducted the evaluation and their contact information.

Name: Jeremy Lynn

Title: Hydrogeologist

Organization: Fulcrum Environmental Consulting, Inc.

Mailing address: 406 North 2nd Street

City: Yakima

State: WA

Zip code: 98901

Phone: 509-574-0839

Fax:

E-mail: Jeremy.lynn@efulcrum.net

Step 3: DOCUMENT EVALUATION TYPE AND RESULTS

A. Exclusion from further evaluation.

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

- ☐ Yes *If you answered "YES," then answer **Question 2**.*
- ☒ No or Unknown *If you answered "NO" or "UNKNOWN," then skip to **Step 3B** of this form.*

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

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

- ☐ All soil contamination is, or will be,* at least 15 feet below the surface.
- ☐ All soil contamination is, or will be,* at least 6 feet below the surface (or alternative depth if approved by Ecology), and institutional controls are used to manage remaining contamination.

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

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

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

- ☐ There is less than 0.25 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site and any of the following chemicals is present: chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.
- ☐ For sites not containing any of the chemicals mentioned above, there is less than 1.5 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site.

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

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

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

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

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

B. Simplified evaluation.

1. Does the Site qualify for a simplified evaluation?

- ☒ Yes *If you answered "YES," then answer **Question 2** below.*
- ☐ No or Unknown *If you answered "NO" or "UNKNOWN," then skip to **Step 3C** of this form.*

2. Did you conduct a simplified evaluation?

- ☒ Yes *If you answered "YES," then answer **Question 3** below.*
- ☐ No *If you answered "NO," then skip to **Step 3C** of this form.*

3. Was further evaluation necessary?

- ☐ Yes *If you answered "YES," then answer **Question 4** below.*
- ☒ No *If you answered "NO," then answer **Question 5** below.*

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

- ☐ Used the concentrations listed in Table 749-2 as cleanup levels. *If so, then skip to **Step 4** of this form.*
- ☐ Conducted a site-specific evaluation. *If so, then skip to **Step 3C** of this form.*

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

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

- ☐ Area of soil contamination at the Site is not more than 350 square feet.
- ☐ Current or planned land use makes wildlife exposure unlikely. Used Table 749-1.

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

- ☐ No potential exposure pathways from soil contamination to ecological receptors.

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

- ☒ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations that exceed the values listed in Table 749-2.
- ☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations that exceed the values listed in Table 749-2, and institutional controls are used to manage remaining contamination.
- ☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays.
- ☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays, and institutional controls are used to manage remaining contamination.

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

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

- ☐ Yes *If you answered “YES,” then answer **Question 2** below.*
- ☐ No *If you answered “NO,” then identify the reason here and then skip to **Question 5** below:*
- ☐ No issues were identified during the problem formulation step.
- ☐ While issues were identified, those issues were addressed by the cleanup actions for protecting human health.

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

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

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

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

4. What was the result of those evaluations?

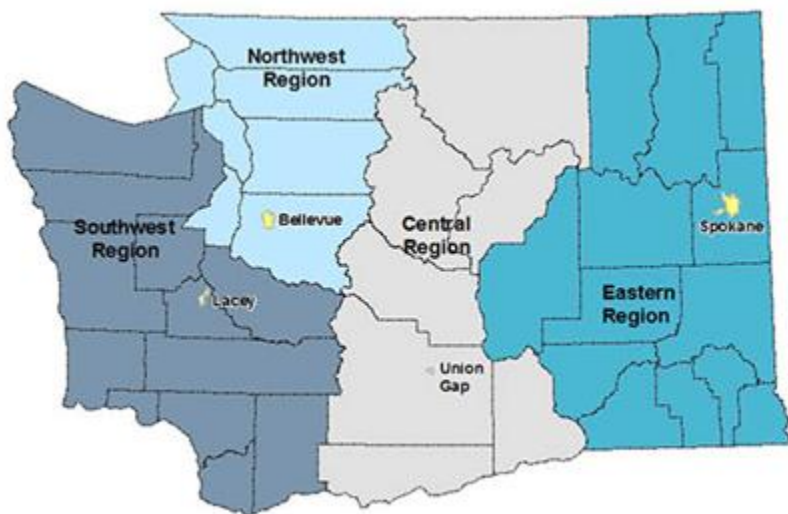
- ☐ Confirmed there was no problem.
- ☐ Confirmed there was a problem and established site-specific cleanup levels.

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

- ☐ Yes If so, please identify the Ecology staff who approved those steps:
- ☐ No

Step 4: SUBMITTAL

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



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

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